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Visual versus Text contents: Adaptive Tutoring for Mathematics Assignments on ASSISTments

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Visual versus Text contents:

Adaptive Tutoring for Mathematics Assignments on ASSISTments

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Abstract

This project concentrates on three main goals. The first goal is to develop additional contents for ASSISTments system targeting second, third, and fourth graders. The second goal is to determine whether visual contents have an advantage in convey information and engage more interests in students compared to plain text-based contents. These contents can vary in the forms of questions, hints, feedbacks or separated message. The third and final objective of this project is to compare the effectiveness of different types of visual contents, in this case, different videos of the same topic with different presentation narratives. A study was then conducted using these problems sets to acquire data with the purpose of determining which method is more effective. For each problem set, students were randomly assigned in either an experimental group or a control group, which were exposed to either extra video helps or simply textual feedback respectively. The data was then collected and analyzed. In conclusion, although the study was inconclusive about the impacts of visual versus textual, some trends were observed in the effectiveness of different media feedbacks, and many issues associated with the study were addressed throughout the project. The problem sets will continue to run in ASSISTments and more data can be collected for future analysis.

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1. Introduction

We have two main goals for our Interactive Qualifying Project. First is developing mathematical questions with different kinds of tutoring solutions for them, and second, to analyze real data with real students from ASSISTments system and investigate the effectiveness between the different solutions: Text feedback vs. Video feedback, Adaptive vs. Nonadaptive and Motivation video vs. Content video.

During the first term of project, and based on Common Core State Standards for second grade. We created different variablized templates based on seven skills for second and third grade including: Use addition and subtraction within 100 to solve one- and two-step word problems; Add and subtract within 20; Determine whether a group of objects (up to 20) has an odd or even number of members; Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones; Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using \$ and ¢ symbols appropriately; Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m.; and Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using $>$, $=$, and $<$ symbols to record the results of comparisons. Seven skill were divided equally among two member of this project with the help and supervision of our advisors. We created more than one thousand problems and they are certified to use in schools.

For the second goal, we and our advisor have to select three skills from seven skill that appropriate with different kind of tutorials (Text, Video, and Image). For the Text feedback vs. Video feedback study, we chose elapsed time problem based on elapsed time problem (Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m.).

For the Adaptive vs. Nonadaptive study, we chose Coin problem (Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using \$ and ¢ symbols appropriately), and for the last study, we selected Story problem (Use addition and subtraction within 100 to solve one- and two-step word problems). After that, we design three studies based on three skills above. And student that take part in ASSISTments is divided into two group control and experiment for each study. Finally, we analyze result from ASSISTments data and give the conclusion.

2. Background

2.1. ASSISTments system

ASSISTments is a free public online tutoring program that provides immediate feedback to teachers, students, and parents that was founded by Professor Neil Heffernan of Worcester Polytechnic Institute. ASSISTments allows teachers to use prebuilt problem sets, edit those pre-built problem sets, or even build their own.

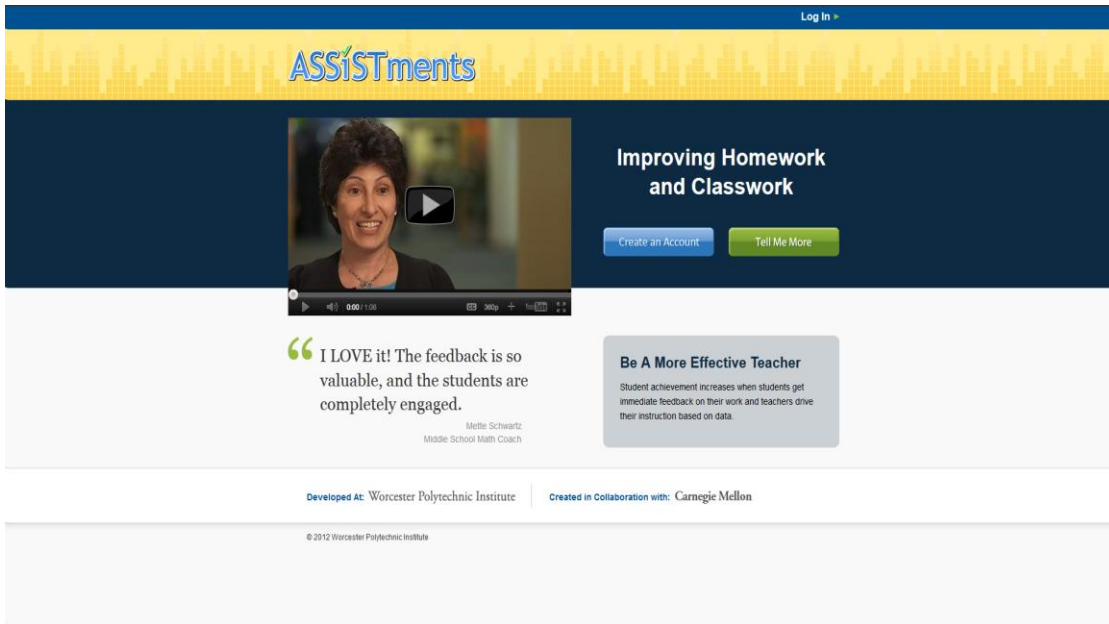


Figure 2.1: Screenshot of ASSISTments website

2.1.1. Builder Tab

ASSISTments system allows teacher to creating problems and problem sets directly on website and apply these problems for pre-built problem set using Builder Tab. And inside Builder Tab, there are have many features that help teacher can organize their problems by skills or by content. Teacher also can access to problem set they built under Builder tab.

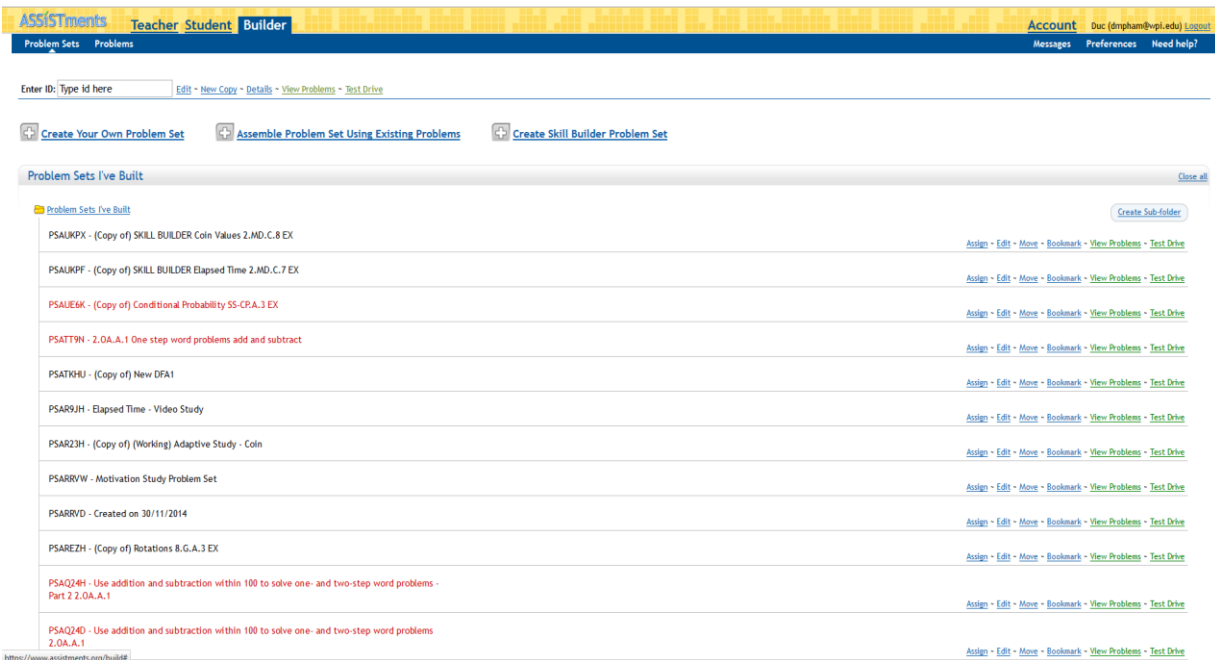


Figure 2.2: Screenshot of Builder Tab

2.1.2. Teacher Tab

Teach can easily use Teacher tab inside ASSISTments to create class and assign any problems that they created in Builder Tab or other problem from other builders for this class. They also can modify and add class information.

Once they assigned problem, teacher can assign due date and release date follow their plan for problems. Moreover, teacher can control class progress on any assignment

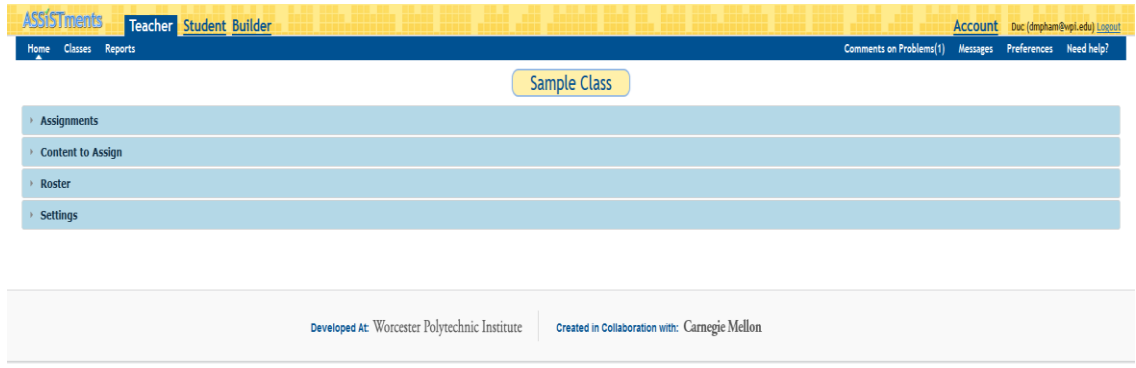


Figure 2.3: Screenshot of Teacher Tab

2.1.3. Skill Builders

Skill Builders are problem sets based on one specific skill where the student is required to solve a pre-determined amount of questions correctly in a row. Students are informed immediately whether their answer is correct and can use hints if they need help, although using a hint marks the question as incorrect.

ASSISTments Teacher Student Builder Account Duc (dmpham@wpi.edu) Logout

Assignments Settings About

Problem: 3 / 5

- What is the miss... ✓
- When Stella got ... ✓
- Ms. Levett plant...

Assignment: 41 - Using addition and subtraction to solve word problems (2.OA.A.1) - Set A

Problem ID: PRAB6R5 [Comment on this problem](#)

Ms. Levett planted 4 sunflower seeds in her front yard and 5 sunflower seeds in her back yard. She has 6 sunflower seeds left. How many seeds did she have when she started planting?

Type your answer below (mathematical expression):

Submit Answer Show hint 1 of 2

Figure 2.4: Screenshot of Skill Builder

2.2. Video Feedback and Text Feedback

On this study, our goals are collect and analyze large amounts of data to observe the effect of different kind of videos feedback compare to text feedback. Another goal is to use this data to create problems and tutoring strategies that most benefit students' learning mathematical skills

2.2.1. Video Feedback

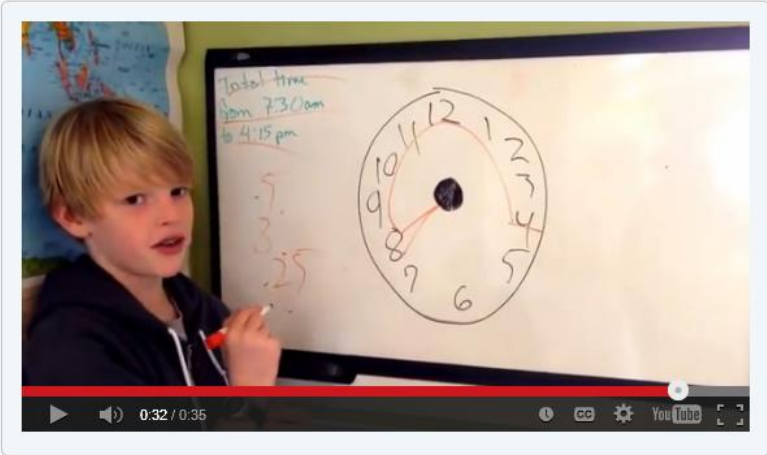
Video feedback is a kind of solutions and hints for student when they need, instead of having hint or solution by words, we will let good students in higher grade making video with their own solution for problems. And when student clicked to hint or did problem

wrong, ASSISTments will show the video tutorial for them. In this project, we will make video feedbacks with different solutions.

Assignment: Problem #PSA5X2T

Problem ID: PRA5X2T [Comment on this problem](#)

How much time has passed from 7:30 am to 4:15 pm?



Select one:

- 8 hours
- 8 hours and three quarters hour
- 8 hours and a half
- 7 hours and one quarter hour

✖ Sorry, try again: "8 hours and a half" is not correct

Figure 2.5: Screenshot of Tom video feedback problem

2.2.2. Text Feedback

Text feedback is a kind of feedback that uses words to describe and explain information

Assignment: Problem #PSA52M4

Problem ID: PRA52M4 [Comment on this problem](#)

How much time has passed from 7:30 am to 4:15 pm?

From 7:30 am to noon is 4 hours and fifteen minutes. In other words, 4 and one half hours.

From noon to 4:15 pm is 4 hours and fifteen minutes. In other words, 4 and one quarter hours.

Thus, from 7:30 am to 4:15 pm is

$4 + \text{one half} + 4 + \text{one quarter} = 8 \text{ and three quarter hours.}$

Select one:

8 hours and a half

8 hours and three quarters hour

7 hours and one quarter hour

8 hours

✘ Sorry, try again: "7 hours and one quarter hour" is not correct

Figure 2.6: Screenshot of Text Feedback

2.3. Adaptive and Nonadaptive

In this study, we will collect and analyze large amounts of data to observe the effect of adaptive tutoring compared to nonadaptive tutoring. Students in the nonadaptive group will only receive hints and solutions for the questions that answer incorrectly. Students in the adaptive group will additionally participate in a small quiz to remind them of the basic concepts before attempting the skill builder

2.3.1. Adaptive

Students in the adaptive group will additionally participate in a small quiz to remind them of the basic concepts before attempting the skill builder

Assignment: Problem #PSA3GRY

Problem ID: PRA3GRY

[Comment on this problem](#)

What is this coin called?



This is a quarter.

The other side sometimes looks like this.



Figure 2.7: Screenshot problem 1 (image) - solution

2.3.2. Non-Adaptive

Students in the nonadaptive group will only receive hints and solutions for the questions that answer incorrectly.

What is a **quarter** worth?

A quarter = 25 cents.

It looks like this.



Select one:

Figure 2.8: Screenshot problem 1 (text) - solution

2.4. Motivational Video and Content Video

The goals of this study is observe the effect of including motivational and/or content video feedback in mathematical problem on students' performance. It aims to improve students' learning experience and improve their performances through means of encouragement and motivations

2.4.1. Motivation Video

Student in the motivational video group will received a video that will inspire them rather than give them solution after they did problem incorrectly.

We haven't had the motivational video yet.

2.4.2. Content Video

Student in the motivational video group will received a video that shows steps of solving problem to help them.

We haven't had the content video yet.

3. Content

At the beginning of project, we need to follow the Common Core Standards and choose seven different skills for second grade. After selecting skill, our advisor will divide these skills for each member in our group and we start creating problems based on these skill. The table below will show Skill name, ID and Descriptions of problem sets that we created.

Skill	Descriptions	Simple Problem Set
2.OA.A.1	Use addition and subtraction within 100 to solve one- and two-step word problems	PSAQ24D
2.OA.B.2	Add and Subtract within 20	PSAQYSV PSAQYSY
2.NBT.A.4	Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using $>$, $=$, and $<$ symbols to record the results of comparisons	PSAQBPQ
2.OA.C.3	Determine whether a group of objects (up to 20) has an odd or even number of members	PSAQYS4
2.NBT.1	Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones	PSAP7AH
2.MD.C.7	Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m.	PSAUMU2
2.MD.C.8	Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using \$ and ¢ symbols appropriately.	PSAQYXH PSAQYXN PSAQYW7

Table 3.1: Problem set list

Our group have 2 member: Duc and Long:

Duc is assigned 2.OA.A.1, 2.OA.B.2 and 2.OA.C.3

Long is assigned 2.NBT.A.4, 2.NBT.1, 2.MD.C.7 and 2.MD.C.8

Because we are not familiar ASSISTments builder system at the first time so our advisor let us see some video tutorials about building problem on Professor Nail Heffernan's website and we need to finish completely one problem set at a time before start working on other problem set. And to make our work stay organized and solid, our advisor create a Google folder that all member and advisor can access to it put all of our works under this folder. Moreover, we also making a spreadsheet to tracking current progress of each member.

3.1. Creating problems:

At the beginning of project, because our group are all international students so we are not familiar with United State education system. We need to spend two to reading and research about U.S education system especially Common Core State Standards for second grade through Core Standards and understanding example in LearnZillion.

<http://www.corestandards.org/Math/Content/2/introduction/>

<https://learnzillion.com/>

After that, we start writing problem for ASSISTments and our problem will depend on randomly function on ASSISTments so we need to create draft problem with variables to random. You can see in example below

Font Sizes **B** *I* U ~~S~~

- ☰
- ☰

A **A** 🔗 $\sqrt{\quad}$ Ω x_2 x^2

%v{name} has %v{a} rulers and %v{b} pencils. How many study items does %v{name} have?

Save Problem Body

Problem Type: Algebra

Variables

a = 1+rand(49) Drag

b = 1+rand(49) Drag

c = a+b Drag

name = {Mejia; Lisa; Lina; Luna; Alice; Katherine}
 Variable is in the set.
 Variable has string values. Drag

[+ New variable](#)

Figure 3.1: Problem with random variables

Figure 3.1 shows that, problem will have 3 random variables and each time we test problem, it will show the same problem with different numbers. For instance, variable “a” will be randomly choose in range of 1 to 49.

And all of problems that we created will be checked by advisor to make sure our problem are organize, difficult enough and do not have any grammar mistake. After that, we will modify problems follow feedback from our advisor and we will repeatedly doing these steps until our problems get approved.

3.2. Problem Set

Moving to the B-term, we start creating simple problem sets by making instances. From each draft problem that has random variables, we will create 40 instances based on random variables. These problem set will be checked and approved by our advisor. They are first step that make us familiar with problem set. After that, we need to choose 3 skills that interesting and

suitable with our research. We spent two week to discuss about this problem with our advisor and finally we chose: Story problem for Motivational study, Elapsed time for Video study and Coin problem for Adaptive study. The next step is designing structure for each study. At this stage, Duc will handle about Motivational study, Long will handle Adaptive study and for Video study, we both doing together. With the help from our advisor, we start designing structure for problem sets. This work is very hard and we need to face with many problems such as logistics, choosing problems, how to make conditionsWe spent almost B term to solve all of these problems and make problem sets. However, we only can finish works for Adaptive study and Video study. For Motivational study, we do not have enough resources specially Motivational Videos and Content Videos to finish it.

3.3. Video Tutorial

In this IQP, we applied a new technology in making video for kids. It is called Crowdsourcing. We will use video tutorials making by students instead of teacher. Specially, we let two different students doing their feedback on the same problem. They need to provide their own solution for this problem and we will capturing their step of solving problem inside videos. Kids will randomly assigned problems with different video solutions. We will observe the result from each solution to see that which solution is better and the amount of knowledge that student can gain from them.

Example:

Question - PRA33CK: How much time has passed from 7:30 am to 4:15 pm?

Solution 1 - Making by Charlie: <http://youtu.be/lBbWTnCwTQw>

Solution 2 - Making by Tom: <http://youtu.be/IO6QTMjrtr>

4. Studies and Results

This part will focus on describe specifically 3 three study : Adaptive vs. Non-adaptive, Video vs. Text Feedback and Motivational vs Content Video. We chose 3 skills that suitable for these studies.

1. Adaptive vs. Non-adaptive: Coin recognition
2. Video vs. Text Feedback: Elapsed time
3. Motivational vs Content Video: Story problems

We started assigning each of these studies for real students on ASSISTments except Motivational vs. Content Video (Do not have videos yet). This part will describe these studies in detail and analyze results from ASSISTments data.

4.1. Adaptive vs. Non-adaptive Study

Simple problem set: PSAQYXH
PSAQYXN
PSAQYW7

4.1.1. Research Goal

The main goal for this experiment is to use ASSISTments and its ability to collect and analyze large amounts of data to observe the effect of adaptive tutoring compared to nonadaptive tutoring. Students in the nonadaptive group will only receive hints and solutions for the questions they answer incorrectly. Students in the adaptive group will additionally participate in a small quiz to remind them of the basic concepts before attempting the skill builder. Another goal is to use this data to create problems and tutoring strategies that most benefit students' mathematical skills.

4.1.2. Hypothesis

We expect:

1. Students with the adaptive tutoring will have superior performance. They are expected to get three problems (in the skill builder) right in a row faster than the nonadaptive group. They are also expected to have a higher number of correct answers in the end. We believe that by reminding them of the basic concepts, it will help them better understanding the problems in the skill builder as well as the hints if they are given.
2. Students with the non-adaptive tutoring will have inferior results. They will need a longer time to get three questions right in a row or they may never will. We speculate that when a student unable to answer a problem, it's got to do with the fact they might not understand the basic concept very well, and keep giving hints will not guarantee their improvements. This will lead to the aforementioned students not understanding the hints being given and growing more frustrated and disappointed. Thus, it leads to poorer performance.
3. However, students that already know the skill well will have similar results in both adaptive and nonadaptive tutoring.

4.1.3. Background

4.1.3.1. Studies

Problem Set: PSASA4B

Public preview: [here](#)

4.1.3.2. Design Diagram

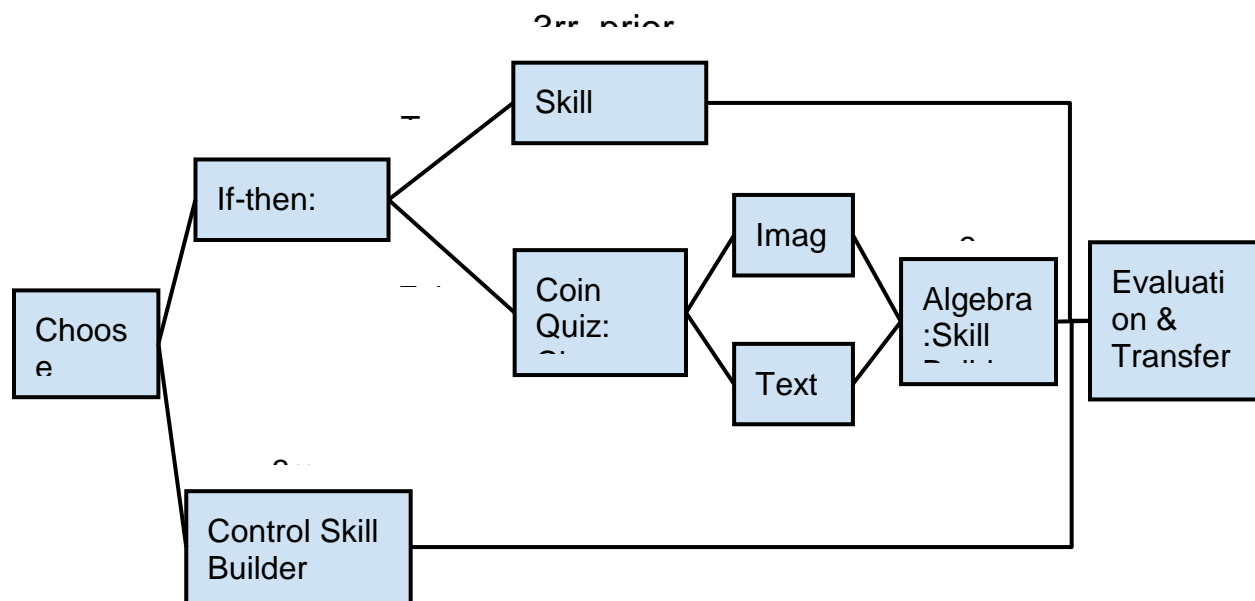


Figure 4.1.1. After the study above all the student do the transfer items.

4.1.3.3. Problems

4.1.3.3.1. Skill Builder problems

(This section is named Algebra in Figure 4.1.5 design)

Assignment: Problem #PSA4GTT

Problem ID: PRA4GTT [Comment on this problem](#)

Ryan has 14 nickels. He used the money to buy a Pokemon trade card. The card cost 61 pennies. How many cents does he have left?

A nickel is 5 cents.
A penny is 1 cent.
[Comment on this hint](#)

Ryan has 14 nickels meaning he has 70 cents.
The card cost 61 pennies meaning it cost 61 cents.
[Comment on this hint](#)

Ryan has
 $70 - 61 = 9$ cents left.
Type in 9.
[Comment on this hint](#)

Type your answer below (mathematical expression):

✓ Correct!

Figure 4.1.2. Screenshot problem 1

The first ten problems of all three sections Control, Adaptive- true and Adaptive- False are exactly the same (same problems, same orders). Starting from problem 11, all the subsequent problems are still the same but in different orders. The reason similar problems had different IDs is because the old version of ASSISTments was unable to include the same problem in different sections. This was later changed so that similar problems have the same ID. [Here](#) is our list of all the IDs.

4.1.3.3.2. Coin Quiz


We developed two versions of the coin quiz in order to compare the effectiveness of text-based content versus visual content.

Image: The students in this group is shown a group of pictures of US coins and asked to identify the names of the coins. The side of the coins they are shown reflect the value in cents of each coin but not the names of the coins. If they get it wrong, they are shown the other side of the coins.

Assignment: Problem #PSA3GRY

Problem ID: *PRA3GRY* [Comment on this problem](#)

What is this coin called?



Select one:

- Nickel
- Penny
- Quarter
- Dime

Figure 4.1.3a. Screenshot problem 1 (image)

Assignment: Problem #PSA3GRY

Problem ID: PRA3GRY

[Comment on this problem](#)

What is this coin called?



This is a quarter.

The other side sometimes looks like this.



Figure 4.1.3b. Screenshot problem 1 (image) - solution

Text: This group is asked the values in cents of all the US coins but they are not shown any images. If they get it wrong, they are shown they images of both sides of the coin.

Assignment: Problem #PSA3GR4

Problem ID: *PRA3GR4* [Comment on this problem](#)

What is a **quarter** worth?

Select one:

- 1 cent
- 5 cents
- 10 cents
- 25 cents

Submit Answer

Figure 4.1.4a. Screenshot problem 1 (text)

What is a **quarter** worth?

A quarter = 25 cents.

It looks like this.



Select one:

Figure 4.1.4b. Screenshot problem 1 (text) - solution

The Coin Quiz IDs can be viewed [here](#).

4.1.4. Design

The screenshot displays the 'SKILL BUILDER Coin Values 2.MD.C.8 EX' interface. At the top, there are navigation links: 'New Copy', 'Details', 'View Problems', and 'Test Drive'. Below this is the 'Problem Set Settings' section, which includes radio buttons for 'Linear Order', 'Random Order', 'Skill Builder', 'Linear Skill Builder', and 'Choose Condition'. There are also options to 'Change all Problems in this problem set to:' with radio buttons for 'Tutor Mode' and 'Test Mode'. The 'Problems' section lists several items, including 'PRA4ZB7 - This is a skill b... Problem' with a 'Test' dropdown and 'View Problem', 'Test Drive', 'Edit', 'Delete', and 'Drag' buttons. Other items include 'The Study ChooseCondition', 'Transfer item Linear Order', and 'Transfer item Linear Order', each with 'Advanced Options', 'Edit', 'Delete', and 'Drag' buttons. At the bottom, there are two buttons: 'Add existing problems' and 'Write New Problems Using the Builder'. On the right side, there is a vertical list of items: 'SKILL BUILDER Coi...', 'The Study', 'Control', 'Adaptive', 'True', 'False', 'Coin Quiz', 'text', 'image', 'Algebra', and 'Transfer item'.

Figure 4.1.5. Overall design

Figure 4.1.5 shows the overall design of the study, the detailed design will be explained in the following subsections.

4.1.4.1. Welcome Message

At first, the students will be shown a welcoming screen letting them know that they are about to participate in a skillbuilder.

The screenshot shows a welcome screen for the 'Assignment: SKILL BUILDER Coin Values 2.MD.C.8 EX'. The problem ID is 'PRA4ZB7' and there is a link to 'Comment on this problem'. The main message reads: 'This is a skill builder. You will work until you get three right in a row.' Below this, there is a 'Select one:' section with a radio button option: 'I am ready to work until I get three right in a row.' and a 'Submit Answer' button.

Figure 4.1.6. Welcome screen.

4.1.4.2. Skill builder

After they get pass this welcome message, the students are randomly assigned either the Control group or the Experimented group.

4.1.4.2.1. Control Group:

This subsection is designed as Linear Skill Builder. A student can pass this subsection if they answer three problem correctly in a row.

4.1.4.2.2. Experimented Group:

After a student is assigned to this group, they will be asked to answer a “conditional” question. If the student answer this question correctly, they are put under the “True” group. Otherwise, they are put under the “False” condition. Figure 4.1.7 shows the conditional question. This is also the same first question of the Control group. This is so that we can create the same initial condition for the two groups, control and experimented.

Assignment: Problem #PSA4GTT

Problem ID: PRA4GTT [Comment on this problem](#)

Ryan has 14 nickels. He used the money to buy a Pokemon trade card. The card cost 61 pennies. How many cents does he have left?

Type your answer below (mathematical expression):

Figure 4.1.7. Conditional question

4.1.4.2.2.1. True Condition:

The student will answer the same question as the control group. If they answer 3 problems correctly in a row, they pass. It is worth remembering that if they answer the second and the third problems correctly, they will automatically pass since the conditional problem is also counted for.

4.1.4.2.2.2. False condition:

The structure of this sub-group is a little more complicated than the True condition group. This is shown in Figure 4.1.8].

Problems

[PRA4QZH - Sorry you got the... Problem](#)

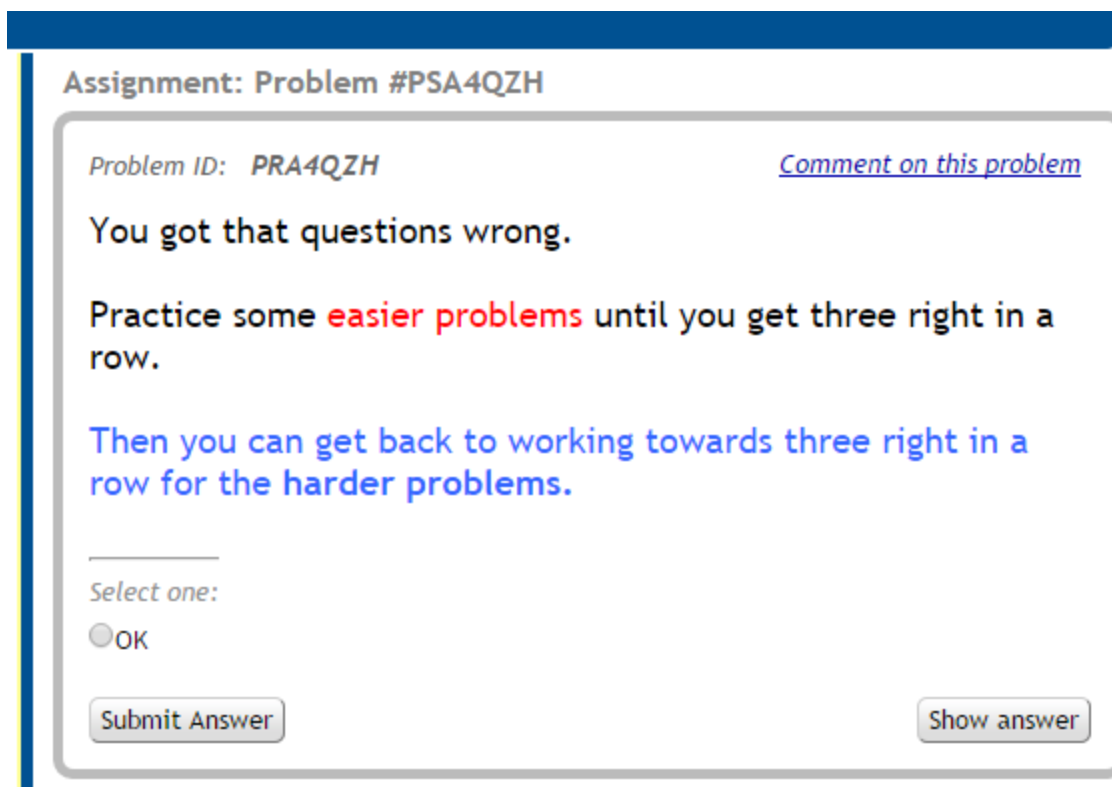
[Coin Quiz ChooseCondition](#)

[PRA4QZG - You did it! You g... Problem](#)

[Algebra Linear Skill Builder](#)

Figure 4.1.8. False group's structure

The student is first informed that they got the first question wrong and prompting them to practice with some easier problems first, as shown in Figure 4.1.9].



The screenshot shows a feedback message box with a blue header bar. The text inside the box reads: "Assignment: Problem #PSA4QZH", "Problem ID: PRA4QZH", and a link "Comment on this problem". The main message says "You got that questions wrong." followed by "Practice some easier problems until you get three right in a row." and "Then you can get back to working towards three right in a row for the harder problems." Below this is a "Select one:" section with a radio button next to "OK". At the bottom are two buttons: "Submit Answer" and "Show answer".

Figure 4.1.9. You got the first question wrong

The student then will be given a small quiz in order to remind them of the basic knowledge regarding the problems. This subsection is called the Coin Quiz. The student will be randomly assigned to either the text-based version of the quiz or the image-based version. Both of them are set up as linear skill builders and contains a set of 4 questions in repetitions (see Figure 4.1.s [3-a,b], and [4-a,b]), students finish the quiz when they get 4 questions correct in a row.

Upon finishing the coin quiz, they will be greeted with a screen to congratulating on finishing the quiz and prompting them to continue with the skill builder from before.

Assignment: Problem #PSA4QZG

Problem ID: *PRA4QZG* [Comment on this problem](#)

You did it! You got three right in a row for the **easier problems.**

Now get three right in a row for the **harder problems.**

Select one:

OK

Figure 4.1.10a. Congratulation

From this point onward, the students will face the same question as the True group.

Assignment: SKILL BUILDER Coin Values 2.MD.C.8 EX

Problem ID: *PRA4GTV* [Comment on this problem](#)

Ryan has 8 nickels. He used the money to buy a Pokemon trade card. The card cost 39 pennies. How many cents does he have left?

Type your answer below (mathematical expression):

Figure 4.1.10b. Second question in the skill builder

4.1.4.3. Evaluation

At the end of the problem set, the students will be asked to leave an evaluation in the following format.

Assignment: null

Problem ID: PRA4NK3

[Comment on this problem](#)

You did it, you got three problems correct in a row! This problem set is almost done.

We want to ask you two questions about how you feel then there will be two harder coin questions.

Did you enjoy these problems?

Select one:

- I enjoyed these problem a lot
- I enjoyed them some
- I did not enjoy them

Submit Answer

Problem ID: PRA4NK3

[Comment on this problem](#)

In this problem set did you think the problems got easier over time?

Select one:

- Yes
- Not sure
- No

Submit Answer

Figure 4.1.11a & 11b: Evaluation

4.1.4.4. Transfer item

After finishing the evaluation, the students will be directed to two additional problems with considerably higher difficulty than the previous problems. These question are called Challenge 1 and Challenge 2.

Assignment: Problem #PSA4NK5

Problem ID: *PRA4NK5* [Comment on this problem](#)

Joshua has 6 dimes and 4 nickels. He used the money to buy a Pokemon trade card. The card cost 72 pennies. How many cents does Joshua have left?

Type your answer below (mathematical expression):

Figure 4.1.12a. Challenge 1 - before the hints are shown

Problem ID: PRA4NK5

[Comment on this problem](#)

Joshua has 6 dimes and 4 nickels. He used the money to buy a Pokemon trade card. The card cost 72 pennies. How many cents does Joshua have left?

A dime is 10 cents.

A nickel is 5 cents.

A penny is 1 cent.

[Comment on this hint](#)

Josh has 6 dimes meaning he has 60 cents.

Josh has 4 nickels meaning he has another 20 cents.

Josh has

$60 + 20 = 80$ cents in total.

The balloon costs 72 pennies meaning it costs 72 cents.

[Comment on this hint](#)

Josh has

$80 - 72 = 8$ cents left.

Type in 8.

[Comment on this hint](#)

Type your answer below (mathematical expression):

Figure 4.1.12b. Challenge 1 - the hints are shown here

Assignment: Problem #PSA4NK6

Problem ID: PRA4NK6

[Comment on this problem](#)

Peter has 2 quarters and 8 nickels. He used the money to buy a Pokemon trade card. The card cost 55 pennies. How many cents does Peter have left?

Type your answer below (mathematical expression):

Submit Answer

Show hint 1 of 3

Figure 4.1.13a. Challenge 1 - before the hints are shown

Problem ID: PRA4NK6

[Comment on this problem](#)

Peter has 2 quarters and 8 nickels. He used the money to buy a Pokemon trade card. The card cost 55 pennies. How many cents does Peter have left?

A quarter is 25 cents.

A dime is 10 cents.

A nickel is 5 cents.

A penny is 1 cent.

[Comment on this hint](#)

Peter has 2 quarters meaning he has 50 cents.

Peter has 8 nickels meaning he has another 40 cents.

Peter has

$50 + 40 = 90$ cents in total.

The balloon costs 55 pennies meaning it costs 55 cents.

[Comment on this hint](#)

Peter has

$90 - 55 = 35$ cents left.

Type in 35.

[Comment on this hint](#)

Figure 4.1.13b. Challenge 2 - the hints are shown here

4.1.5. Result Analysis

Data is [here](#)

The numbers of participants per grades are extracted from columns Sheet: Grade of the data sheet. Of the 46 students participated, 3 cases were thrown out.

1. One student started quit after the first problem. [Row 47]
2. One student in the Experimented group quit after seeing the Coin quiz welcome message. [Row 6]
3. One student in the Control group quit after the second question. [Row 43]

Total	Class IDs	Number of Students
Third-graders: 11	5444	11
Fourth-graders: 31	5309	24
	13407	7
Fifth-grader: 1	5449	1

Table 4.1.1: Class IDs

Group [DE]	First question	Second question	Finish the skill builder [B93:B96], [B30 –D32-II)	Challenge 1 [NH81:NI86]	Challenge 2 [NJ81:NK86]			
Experimented: 23	14 [C76]	13 [AX82]	13	Total: 20 [NH53]	13	13	13	
	9* [C77]	1 [AX83]			4	4	4	4
		Text quiz: 5 [F79]	5 0		4	3	3	3
		Visual quiz: 4 [F78]	4 0		3	10	10	10
Control: 20	11 [AU79]	11 [F26-II]	10	Total: 18	10	10	10	
	9** [AU78]	0 [F27-II]			8	8	8	7
		6 [F24-II]	8			0	0	1
		3 [F24-II]						

Table 4.1.2. Correctness of the first 2 questions and the 2 challenges

*Note: White cells are total amount, Blue cell are students who got the correct answer, Red are incorrect. F24-II: Cell F24, sheet 2: Control Group. These number are extracted from the cell in [...] from the data analysis excel [file](#).

We'll refer to (*) as group A and (**) as group B for convenience.

As seen in Table 4.1.2, 43 students were divided into 2 groups: 23 in Experimented and 20 in Control. In the Control group, 11 students answered the first question correctly (55%), 9 got it wrong (45%). In the Experimented group, 14 students answered the first question correctly (60.87%), 9 got it wrong (30.13%). This is a good ratio between the two groups, seeing both groups had roughly 60% right and 40% wrong. This shows that we got a good split between the Control and the Experimented groups.

9 students did the Coin Quiz (group A). After the quiz, they continued with the second question of the skill builder (Figure 4.1.10b). All 9 students of this group answered the second question correctly. Students in group B didn't do the Coin quiz, and 3 of them answered the next question incorrectly. This likely indicates that the Coin quiz did help the students' performances but due to our small pool of sample, we could not draw any definite conclusion just yet.

From the result in Table 4.1.2, we create Table 4.1.3 to specifically analyze the performances of the students who participated in the visual coin quiz and the text-based coin quiz.

	Visual Quiz			Text Quiz			T-Test Visual Quiz vs Text Quiz	Effect Size Visual Quiz vs Text Quiz
	Number	Mean	Stdev	Number	Mean	Stdev		
Problem 3 - correctness	5/5	100%	0	4/4	100%	0	Cannot determine	Cannot determine
Problem 4 - correctness	5/5	100%	0	4/4	100%	0	Cannot determine	Cannot determine
Completion	4/5	80%	0.5	3/4	80%	0.447213595	0.878616768	0.105572809
Transfer Item 1 - correctness	4/4	100%	0	3/3	100%	0	Cannot determine	Cannot determine
Transfer Item 2 - correctness	4/4	100%	0	3/3	100%	0	Cannot determine	Cannot determine
Combination Of Transfer Items	8/8	100%	0	6/6	100%	0	Cannot determine	Cannot determine

Table 4.1.3: Visual vs. Textual Coin quiz

Table 4.1.3 shows that both groups: visual quiz and text quiz performed answered the next two problems after the coin quiz correctly with a 100% rate. For this reason, the t-test and effect size of the two groups on these two problem was indeterminate. Even upon completion of the skill builder, there seems to be little differences in their overall performance. 4 out of 5 students in the visual group completed the skill builder compared to 3 out of 4 in the other group. Their standard deviations are similar: 0.5 vs. 0.447213595. The t-test and effect size also point to their similar result. The results of both group are identical in the transfer items as well. With the current result, it seems that the visual quiz and the text-based quiz had similar effect on the students.

	Coin Quiz (group A)			No coin quiz (Group B)			T-Test Visual Quiz vs Text Quiz	Effect Size Visual Quiz vs Text Quiz
	Number	Mean	Stdev	Number	Mean	Stdev		
Problem 3- correctness	9/9	100%	0	6/9	66.67%	0.5	0.062771964	1.333333333
Completion	7/9	77.78%	0.440958552	8/9	88.89%	0.333333333	0.55494583	0.287000583
Transfer Item 1 - correctness	7/7	100%	0	8/8	100%	0	Cannot determine	Cannot determine
Transfer Item 2 - correctness	7/7	100%	0	7/8	87.5%	0.353553391	0.368846292	0.707106781
Combination Of Transfer Items	14/14	100%	0	15/16	93.75%	0.353553391	Cannot determine	Cannot determine

Table 4.1.3: Coin quiz vs. no coin quiz.

Table 4.1.3 shows that all 9 student (100%) in group A answered problem 3 correctly while this percentage in group B is 6 out of 9 or 66.67%. The T-test in problem 3 is small (0.062771964) so there is a significant difference in performance of the two groups. In addition, the effect size in problem 3 is large (1.333333333), which implies that the means of two groups differs slightly. Upon completion of the skill builder, their difference in performance are restored to similar

figures with the t-test for completion between two groups is 0.55494583 with an effect size of 0.287000583.

The percentage of correctness of group A is the same as group B in transfer item 1 (both 100%) but higher in transfer item 2, 100% compared to 87.5%. The percentage for overall transfer items, combining both transfer items are close (100% and 93.75%). The T-test values for transfer item 2 are 0.368846292, implying that the two groups have similar performances.

4.2. Video vs. Text Study (Elapsed Time Study)

Simple problem set: PSAUMU2

4.2.1. Research Goal

The goal of this experiment is to use ASSISTments and its ability to collect and analyze large amounts of data to observe the effect of different kind of videos feedback compare to text feedback. Another goal is to use this data to create problems and tutoring strategies that most benefit students' learning mathematical skills. We performed the experiment on fourth grade students.

4.2.2. Hypotheses

We expect that:

1. Students who are given the video tutorial will have superior results than students that only have text feedback because the tutoring are more interactive. Students who are given the normal (text) tutorial will have inferior results because the tutoring are more rigid. However, students with a good fundamental understanding of how to count time should have similar results to the first group.
2. Students who have Charlie's video feedback will have better result than students with Tom's video feedback. The reason is the explanation of Charlie in the video is easier to understand by dividing problems into small part. This will make the audience have better vision than Tom's video.

4.2.3. Background

4.2.3.1. Studies and Problem Set

Problem set: [PSASA67](#)

Public preview: [here](#)

4.2.3.2. Design Diagram

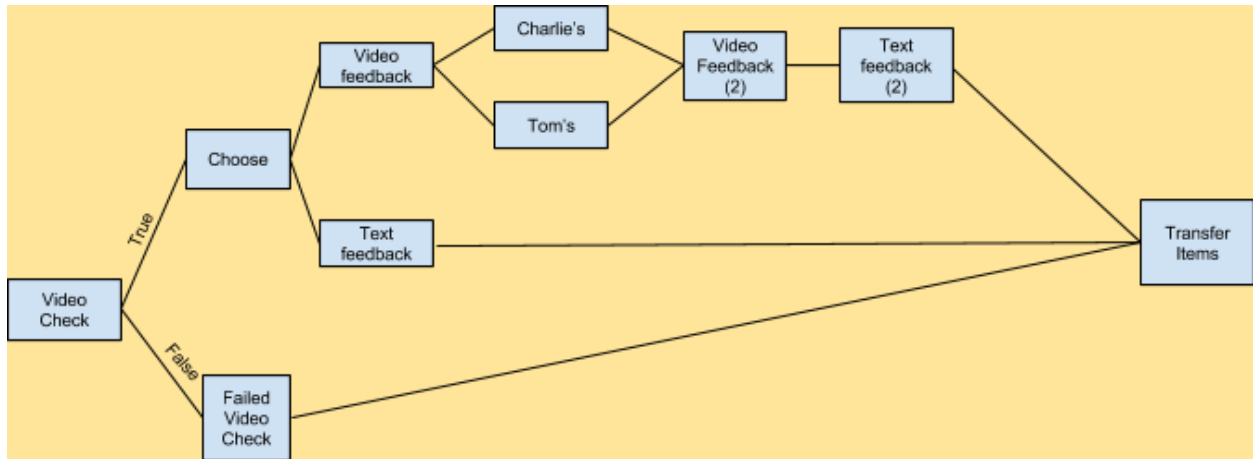


Figure 4.2.1: Design diagram for video feedback study

4.2.3.3. Problems:

4.2.3.3.1. Video check problem:

Student need to complete the video check problem at the first time to check if they are suitable for Video feedback

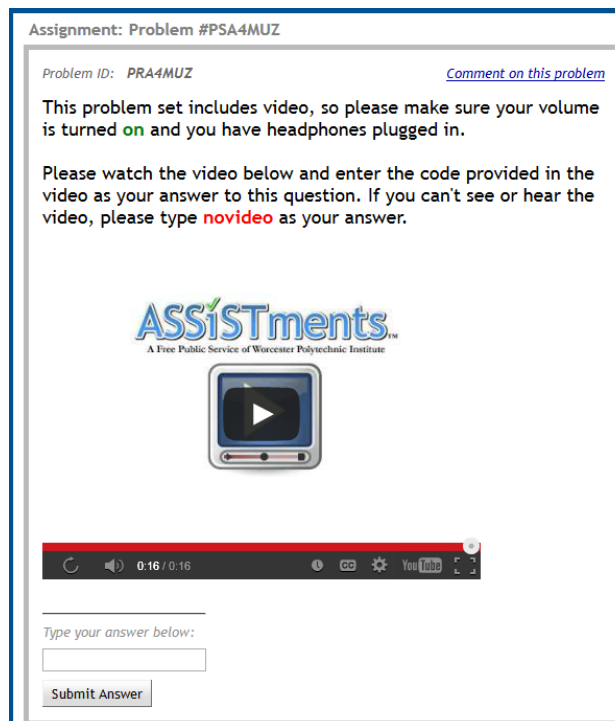


Figure 4.2.2: Screenshot of video check problem

4.2.3.3.2. Tom's video feedback problem:

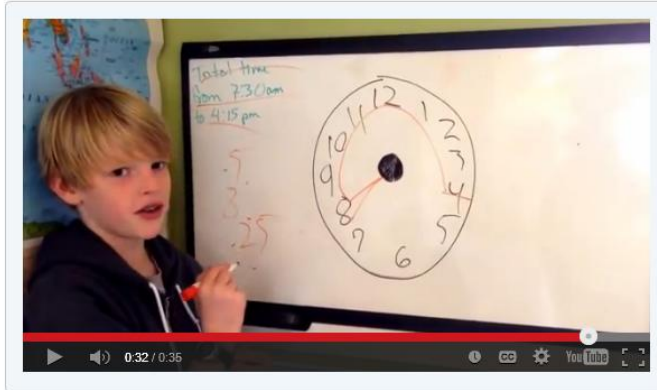
[Video](#) feedback with Tom's explanation when student did the question wrong.

Assignment: Problem #PSA5X2T

Problem ID: PRA5X2T

[Comment on this problem](#)

How much time has passed from 7:30 am to 4:15 pm?



Select one:

- 8 hours
- 8 hours and three quarters hour
- 8 hours and a half
- 7 hours and one quarter hour

✘ Sorry, try again: "8 hours and a half" is not correct

Submit Answer

Figure 4.2.3: Screenshot of Tom video feedback problem

4.2.3.3.3. Charlie's video feedback problem:

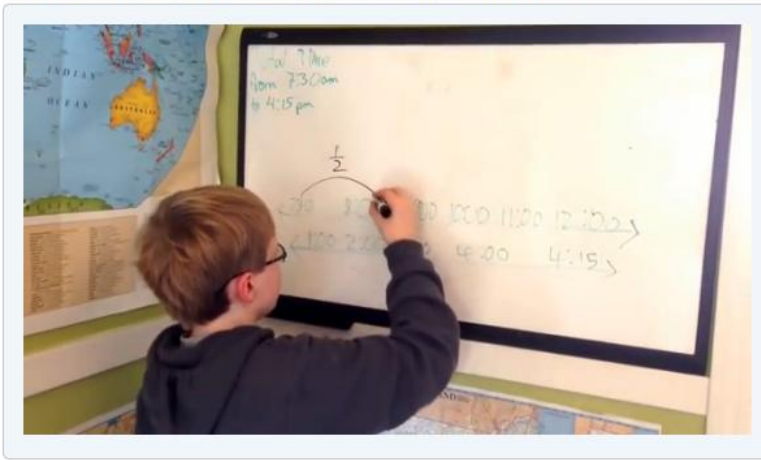
[Video](#) feedback with Charlie's explanation when student did the question wrong.

Assignment: Problem #PSA4J6C

Problem ID: PRA4J6C

[Comment on this problem](#)

How much time has passed from 7:30 am to 4:15 pm?



Select one:

- 8 hours and three quarters hour
- 7 hours and one quarter hour
- 8 hours and a half
- 8 hours

✘ Sorry, try again: "7 hours and one quarter hour" is not correct

Submit Answer

Figure 4.2.4: Screenshot of Charlie video feedback problem

4.2.3.3.4. Text feedback problem:

Text feedback with words explanation when student did the question wrong.

Assignment: Problem #PSA52M4

Problem ID: PRA52M4 [Comment on this problem](#)

How much time has passed from 7:30 am to 4:15 pm?

From 7:30 am to noon is 4 hours and fifteen minutes. In other words, 4 and one half hours.

From noon to 4:15 pm is 4 hours and fifteen minutes. In other words, 4 and one quarter hours.

Thus, from 7:30 am to 4:15 pm is

$4 + \text{one half} + 4 + \text{one quarter} = 8 \text{ and three quarter hours.}$

Select one:

8 hours and a half

8 hours and three quarters hour

7 hours and one quarter hour

8 hours

✘ Sorry, try again: "7 hours and one quarter hour" is not correct

Figure 4.2.5: Screenshot of Text feedback problem

4.2.3.3.5. Problem IDs

Instance	Presenter	Problem Description	Video URL
PRA33CK Charlie: PRA4J6C Tom: PRA4NMY	Tom & Charlie	Elapsed time quarter hour 7:30 to 4:15	http://youtu.be/IO6QTMjrtro (Tom) http://youtu.be/IBbWTnCwTQw (Charlie)
PRA39TJ	Decoteau PRA4J54	2.MD.C.7 - Elapsed time (8:45 am to 5:15 pm)	http://youtu.be/r1PH5B24wFA
PRA36N8 (Removed from study)	Burnett PRA4J55	2.MD.C.7 - Elapsed time (7:15 pm to 5:20 am next day)	http://youtu.be/IQEZLK013xl
PRA39T8	Lindeman PRA4J56	2.MD.C.7 - Elapsed time (7:30 am to 3:20 pm)	http://youtu.be/x7QdJT5I7w

Table 4.2.1: Video problem IDs

You also can see more ID in [here](#).

4.2.4. Design

4.2.4.1. Overall Design

Tree Diagram for Overall design:

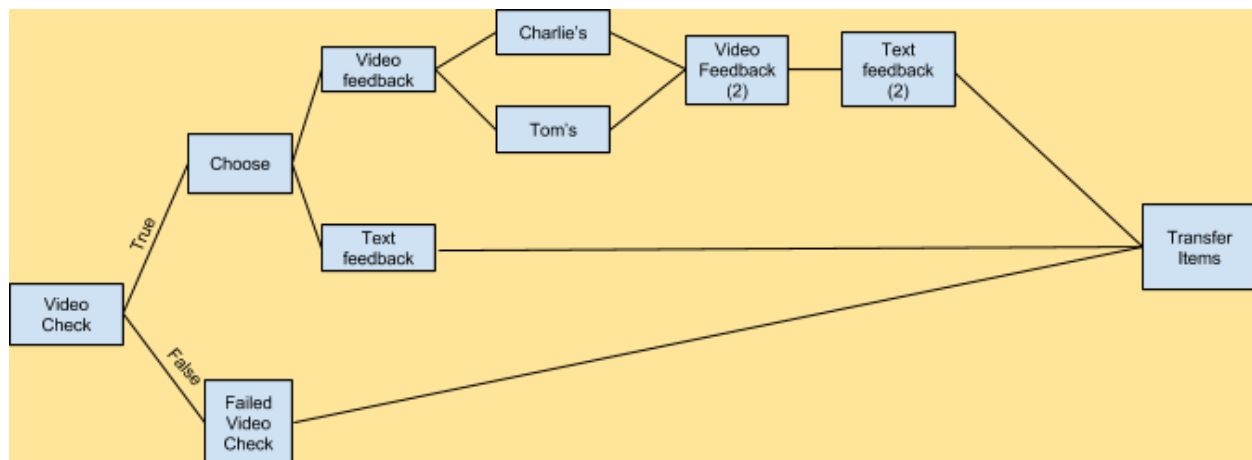


Figure 4.2.6: Design diagram for video feedback study

Actual design in skill builder:

SKILL BUILDER Ela...
Study
True
Video If then, To...
Choose Tom-Charlie
First right
Videos
More to do
First wrong
Videos
More to do
TextFB
If right
Little Random Sec...
More to do
If wrong
Little Random Sec...
More to do text
False
Evaluation & ...

Figure 4.2.7: Screenshot of overall design

4.2.4.2. Video Check

At the beginning of skill builder, student will be asked to complete video check problem. This will help us separate student into 2 group and decide which students are eligible to participate in experiment. If they false the video check problem, they will be move to “False” and have text feedback for all problem. If they pass the video check problem, they can participate in the video experiment. You can see screenshot of problem in Problem part above

4.2.4.3. Tom and Charlie Video Feedback

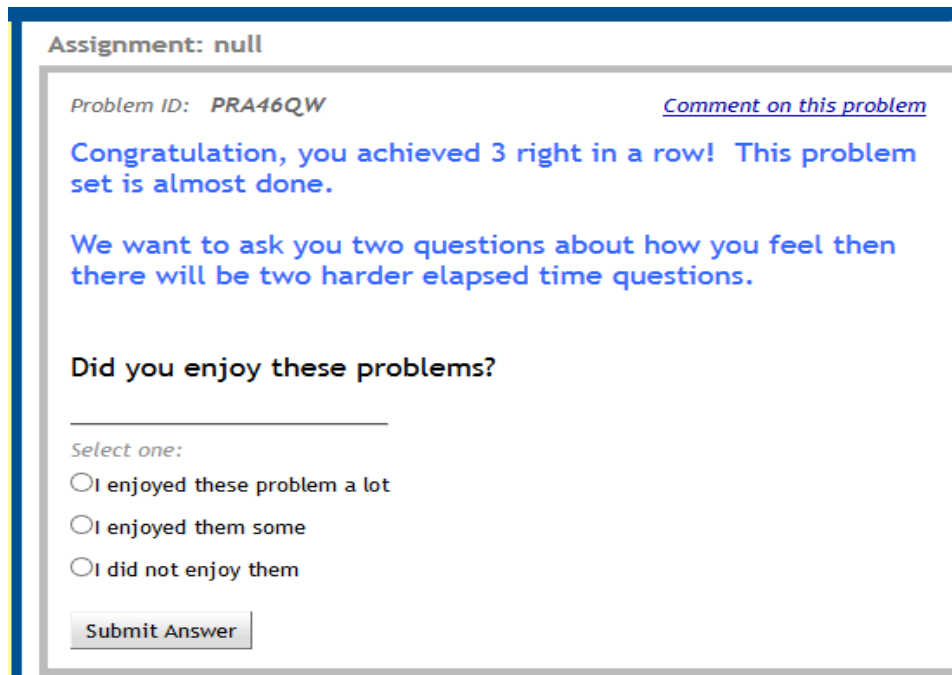
After pass the video check, they will be randomly assigned to “Video If then, Tom Charlie First” or “TextFB” - Text Feedback. If they are in the first condition then they will be assigned problems with Tom and Charlie feedback. In “Video If then, Tom Charlie First” part, we need to separate the tree into 2 parts (First right or First wrong) because to finish skill builder, student need to have 3 right question in a row. So in the first Tom or Charlie video feedback, if they get right, they only need to have 2 more right problem. However if they get wrong they still need 3 right question in a row. After finishing Tom and Charlie video feedback problem, they will have 3 more video problem from Decoteau, **Burnett** and Lindeman. However, we found a mistake in **Burnett’s** explanation so we will remove **Burnett’s video** form study.

4.2.4.4. Text Feedback

In the text feedback part, student will not see any video and they only have feedback with words and all they need is finish problems with 3 right in a row. However, we also make the structure of “TextFB” - Text Feedback the same as “Video If then, Tom Charlie First” - Video Feedback. Because we will do the analysis on student’s performance so we need all student do the same problems.

4.2.4.5. Evaluation

After having 3 questions right in a row. Students will be asked to answer an evaluation question. This question will help us know if students like our skill builder



The screenshot shows a web interface for an evaluation. At the top, it says "Assignment: null". Below that, the "Problem ID: PRA46QW" is displayed, with a link to "Comment on this problem". The main message reads: "Congratulation, you achieved 3 right in a row! This problem set is almost done." This is followed by another message: "We want to ask you two questions about how you feel then there will be two harder elapsed time questions." The question is "Did you enjoy these problems?". Below the question is a horizontal line and the text "Select one:". There are three radio button options: "I enjoyed these problem a lot", "I enjoyed them some", and "I did not enjoy them". At the bottom of the form is a "Submit Answer" button.

Figure 4.2.8: Screenshot of evaluation

4.2.4.6. Transfer’s Item

After finishing the evaluation, the students will be directed to two additional problems with considerably higher difficulty than the previous problems. These question are called Elapsed Time Advance 2 and Elapsed Time Advance 3.

Assignment: Problem #PSA5ZZK

Problem ID: PRA5ZZK

[Comment on this problem](#)

When Travis last checked the clock it was 6:12 pm.
It is now 10:42 pm.
How much time has elapsed?

Answer: __:__ __ (hours:minutes)

The problem wants you to count up from the first time to the second time.
To keep the minutes and the hours separate, do it in 3 steps.

1. From 6:12 pm to 7:00 pm, there are 48 minutes.
2. From 7:00 pm to 10:00 pm, there are 3 hours.
3. And from 10:00 pm to 10:42 pm, there are 42 minutes.

[Comment on this hint](#)

To find the total elapsed time, add the minutes from the beginning and the end together.

$48 \text{ minutes} + 42 \text{ minutes} = 90 \text{ minutes}.$

Remember, there are 60 minutes in 1 hour. Convert the minutes to minutes and hours.

$90 = 60 + 30 = 1 \text{ hour and } 30 \text{ minutes}.$

[Comment on this hint](#)

Type your answer below:

Submit Answer

Show hint 3 of 3

Figure 4.2.9: Screenshot of transfer item: Elapsed Time Advance 2

Problem ID: PRA5ZZM [Comment on this problem](#)

When Cindy last checked the clock it was 5:39 pm.
It is now 8:17 pm.
How much time has elapsed?

Answer: __:__ __ (hours:minutes)

The problem wants you to count up from the first time to the second time. Remember to keep the minutes and the hours separate.

Start by finding the elapsed minutes from 5:39 pm to 6:00 pm. Here, there are 21 minutes.

[Comment on this hint](#)

Now count up the hours. From 6:00 pm to 8:00 pm, there are 2 hours.

[Comment on this hint](#)

Finally, add the minutes from 8:00pm to 8:17 pm. In this case, there are 17 minutes.

In total, there are 21 + 17, or 38 minutes. The elapsed time is 2 hours and 38 minutes. Type 2:38

[Comment on this hint](#)

Type your answer below:

Figure 4.2.10: Screenshot of transfer item: Elapsed Time Advance 3

4.2.5. Result Analysis

Issue with problem set: why some get more than 3 right in a row
Because we have two condition “Tom & Charlie” and “More video to do” each condition have 3 right in a row

4.2.5.1. Study Result

Data is [here](#) - There are total 31 students took part in this Elapsed time study

- 25 Students passed video check
- 6 student did not pass video check

Note: We do not analyze data on students who did not pass video check

On 25 student who passed video check, there are 3 student dropped and did not finish their assignment. All 3 dropped student get assigned Video feedback

- 1 student dropped after question 2
- 2 dropped after question 5

	Column D spreadsheet	Correctness of Problem 2 - Column G	Correctness of Problem 3 - Column I + H	Correctness of Problem 4	Correctness of Transfer items: question 1 – Format is same as Correctness of Problem 3	Correctness of Transfer items: question 2 – Format: same as Correctness of Problem 3		
Pass video check 25	How many assigned video: 15	10	8	7	3	2		
			1	1	4	5		
			1-dropped	0	3-Dropped or didn't do transfer items	3-Dropped or didn't do transfer items		
		5	3 saw Charlie Video	2	2	2	1	
				1	0	1	2	
		2 saw Tom Video	2	2	1	1		
			0	0	1	1		
	How many assigned text: 10	9	6	6	6	2		
			3	2	3	7		
			1	1	0	0		
		1	0	0	1	1		
			0	0	0	0		
		Fail video 6	We don't analyze the data on this group of student					

Table 4.2.2: Distribution of correctness
 Notes: Black is correct. Red is wrong.

Table 4.2.2 shows that 25 students passed video check and 15 of them are assigned video feedback, only 10 students are assigned text feedback. We can see that the random function on ASSISTments not work well in this situation when separate students into different conditions. Moreover, random function on ASSISTments also cannot ensure that students are distributed with same level on each group. For example, on the problem 2 - after passed video check, only

1 out of 10 students did wrong on text feedback condition. However, this number is 5 out of 15 students on video feedback condition. This number also shows that only 5 students actually saw the video feedback. Three of them saw Charlie's video feedback and two of them saw Tom's video feedback. On problem 3, we see a great improvement on students who saw text or video feedback and the next table will illustrate this result in a specific way.

	Video			Text			T-Test Video vs Text FB	Effect Size Video vs Text FB
	Number	Mean	Stdev	Number	Mean	Stdev		
Problem 3 - correctness	4/5	80%	0.4472 13595	1/1	100%	1	Cannot determine	0.2763932 02
Problem 4 - correctness	5/5	100%	0	1/1	100%	1	Cannot determine	0
Completion	5/5	100%	0	1/1	100%	1	Cannot determine	0
Transfer Item 1 correctness	3/5	60%	0.5477 22558	0/1	0%	0	Cannot determine	2.1908902 3
Transfer Item 2 correctness	2/5	40%	0.5477 22558	0/1	0%	0	Cannot determine	2.1908902 3
Combinatio n Of Transfer Items	5/10	50%	0.5270 46277	0/2	0%	0	0.225751 347	Cannot determine

Table 4.2.3: Video vs Text:

This table shows that 4 out of 5 students (80%) who saw video feedback did problem 3 correctly while this percentage in text feedback is 100%. Moreover, only one student on the text feedback condition actually saw the feedback. Hence, it is unable to determine T-test to compare Video feedback to Text feedback in this table. However, we can calculate the effect size to check the strength of the relationship between two conditions. The effect size of Video feedback versus Text feedback in correctness of problem 3 is 0.276393202. This number is very small and illustrates that the Mean in both condition is almost the same. In problem 4, there is an improvement when 100% of student in both group did correctly and the effect size is zero. The percentage of correctness in transfer item, which is 60% for item 1 and 40% for item 2, is much smaller than that of problem 3 or problem 4. It is reasonable because the transfer items

contains advanced questions while problem 3 and problem 4 are easier. Furthermore, the effect size of video and text feedback of transfer items is large (2.19089023). It implies that there are a big difference between video and text feedback.

Question with text feedback is better in problem 3 but worse in transfer items than question with video and they are the same in problem 4.

	Charlie			Tom			T-Test Charlie vs Tom	Effect Size Charlie vs Tom
	Number	Mean	Stdev	Number	Mean	Stdev		
Problem 3 - correctness	2/3	67%	0.577 3502 69	2/2	100%	0	0.495025 346	1.154700 538
Problem 4 - correctness	3/3	100%	0	2/2	100%	0	Cannot determine	0
Completion	3/3	100%	0	2/2	100%	1	Cannot determine	0
Transfer Item 1 correctness	2/3	67%	0.577 3502 69	1/2	50%	0.707 1067 81	0.788779 982	0.259513 024
Transfer Item 2 correctness	1/3	33%	0.577 3502 69	1/2	50%	0.707 1067 81	0.788779 982	0.259513 024
Combinatio n Of Transfer Items	3/6	50%	0.547 7225 58	2/4	50%	0.577 3502 69	1	Cannot determine

Table 4.2.4: Tom vs Charlie

This table shows that 2 out of 3 student (67%) who saw video feedback did problem 3 correctly while this percentage in text feedback is 100%. In problem 4, every student in both conditions did it correctly. The T-test in problem 3 is quite large (0.495) so there is a significant similarity between Tom and Charlie. In addition, the effect size in problem 3 is large (1.155), which implies that the means of Tom's question and Charlie's question are quite different, while the effect size is the same in problem 4. The percentage of correctness of Charlie's question is higher in transfer item 1, 67% compared to 50%, but smaller in transfer item 2, 33% compared to 50%. The percentage for overall transfer items, which combines both transfer item 1 and 2, are the same. The T-test values for transfer item 1 and 2 are 0.789, which is close to 1. It indicates that the results of Tom's question and Charlie's question for transfer items are quite similar. Indeed, Tom's question is better in problem 3. However, both Tom and Charlie have identical results in problem 4 and combination of transfer items.

4.3. Motivational Video vs. Content Video

Simple problem sets: PSAQ24D

4.3.1. Research Goal

This study goal is to observe the effect of including motivational and/or content video feedback in mathematical problem on students' performance. It aims to improve students' learning experience and improve their performances through means of encouragement and motivations. This study is performed on local second-graders through ASSISTments, an online tutoring system developed at Worcester Polytechnic Institute (WPI).

4.3.2. Hypothesis

We expect:

1. On the difference between the groups with video feedbacks versus the group with traditional text feedback, the former group is expected to outperform the latter because
a) motivational videos give them the encouragement to try harder rather than giving up
and b) content videos give more visual hints, which is believed to be more captivating than textual response.
2. On the performance between four subgroups with different kinds of video feedbacks, it is anticipated that the group with only content video feedback will have the best result, followed with the two mixed feedback groups and finally the group with only motivational videos. We assumed that the content videos would reveal more helpful information for the students to improve on subsequent problems.
3. However, it is also expected that students who are familiar with the skills or will not easily suffer from a decrease of confidence to have similar results in all groups.

4.3.3. Background

4.3.3.1. Studies

Firstly, the students will be divided into two groups. The first group is those who cannot or wish not to adopt the video tutoring. The remaining students will be further divided into five subgroups based on their performance on the first two problems in the problem set. Of these four groups, they will either receive only motivational videos, only content videos, or both kinds but in different orders, or no video at all. The details can be seen in the diagram below.

4.3.3.2. Diagram

Problem sets: PSARRVW

Public preview: [Here](#)

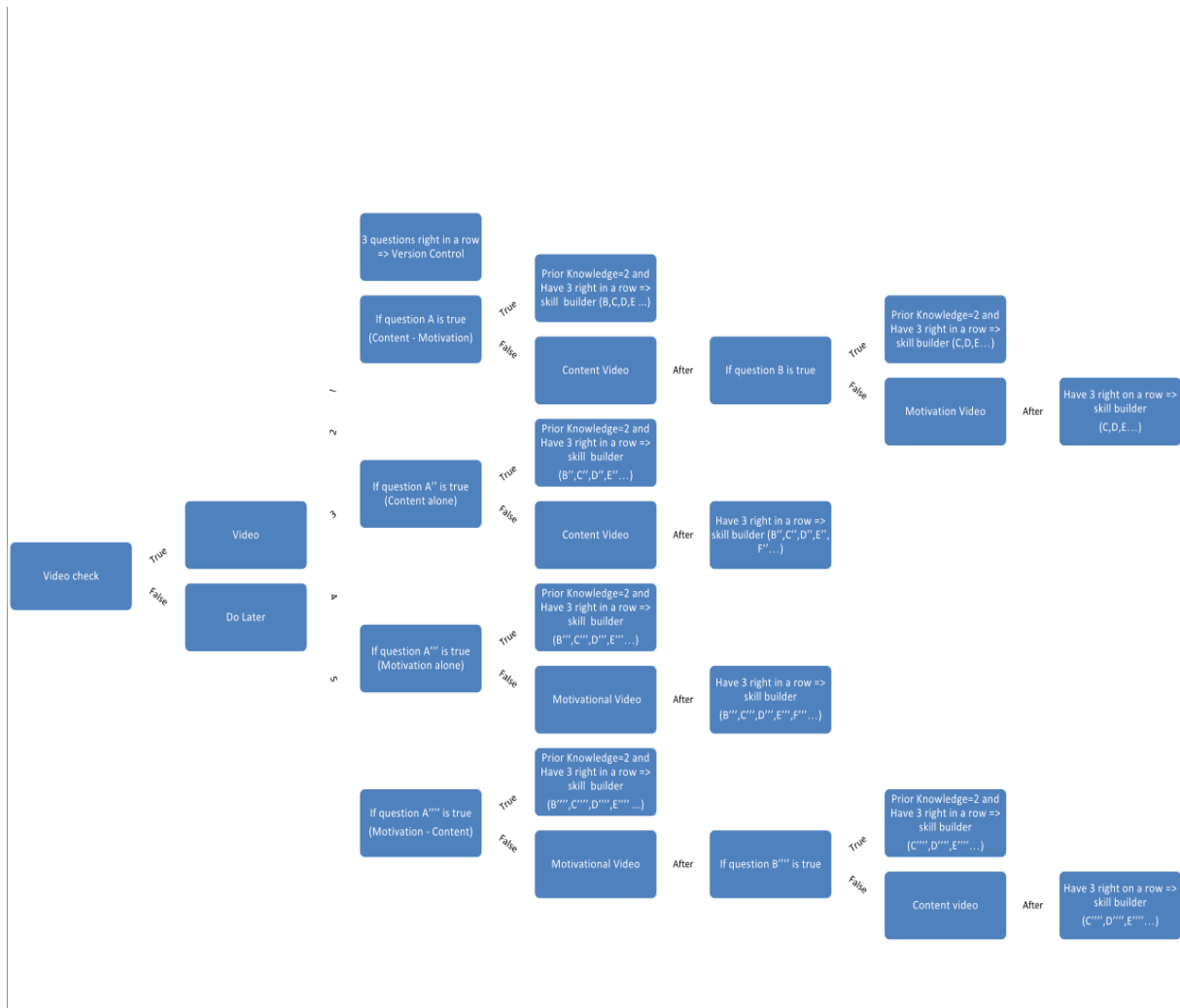


Figure 4.3.1: Design for problem set of motivational study

4.3.3.3. Problems

The problems in this study focus to five types: Change unknown, Start unknown, Part unknown, Compare quality unknown and Referent unknown.

**TYPES OF ADDITION & SUBTRACTION
WORD PROBLEMS**

PROBLEM TYPE			
Join	<i>Result Unknown</i> Laina had four dolls. She bought two more. How many dolls does she have now? $4 + 2 =$	<i>Change Unknown</i> Laina had four dolls. She bought some more dolls. Now she has six dolls. How many dolls did Laina buy? $4 + \quad = 6$	<i>Initial Quantity Unknown</i> Laina had some dolls. She bought two more dolls. Now she has six dolls. How many dolls did Laina have before she bought some more? $\quad + 2 = 6$
Separate	<i>Result Unknown</i> Rodney had ten cookies. He ate three cookies. How many cookies does Rodney have left? $10 - 3 =$	<i>Change Unknown</i> Rodney had ten cookies. He ate some of the cookies. Now he has seven cookies left. How many cookies did Rodney eat? $10 - \quad = 7$	<i>Initial Quantity Unknown</i> Rodney had some cookies. He ate three cookies. Now he has seven cookies left. How many cookies did Rodney have to start with? $\quad - 3 = 7$
Part-Part-Whole	<i>Whole Unknown</i> Five boys and three girls are on the basketball team. How many children are on the basketball team? $5 + 3 =$	<i>Part Unknown</i> Eight children are on the basketball team. Five are boys and the rest are girls. How many girls are on the basketball team? $5 + \quad = 8$	
Compare	<i>Difference Unknown</i> Ahmed has two brothers. Christine has three brothers. Christine has how many more brothers than Ahmed? $3 - 2 =$ or $2 + \quad = 3$	<i>Larger Quantity Unknown</i> Ahmed has two brothers. Christine has one more brother than Ahmed. How many brothers does Christine have? $2 + 1 =$	<i>Smaller Quantity Unknown</i> Christine has one more brother than Ahmed. Christine has three brothers. How many brothers does Ahmed have? $\quad + 1 = 3$ or $3 - \quad = 1$

Table 4.3.1: Types of Addition and Subtraction word problems¹

4.3.4. Design

4.3.4.1. Overall Design

¹ Source: http://www.sde.ct.gov/sde/lib/sde/word_docs/curriculum/mathgoal/book_grades_3-5/chapter_9_word_problem_estimation_references/types_of_addition_subtraction_word_problems.doc

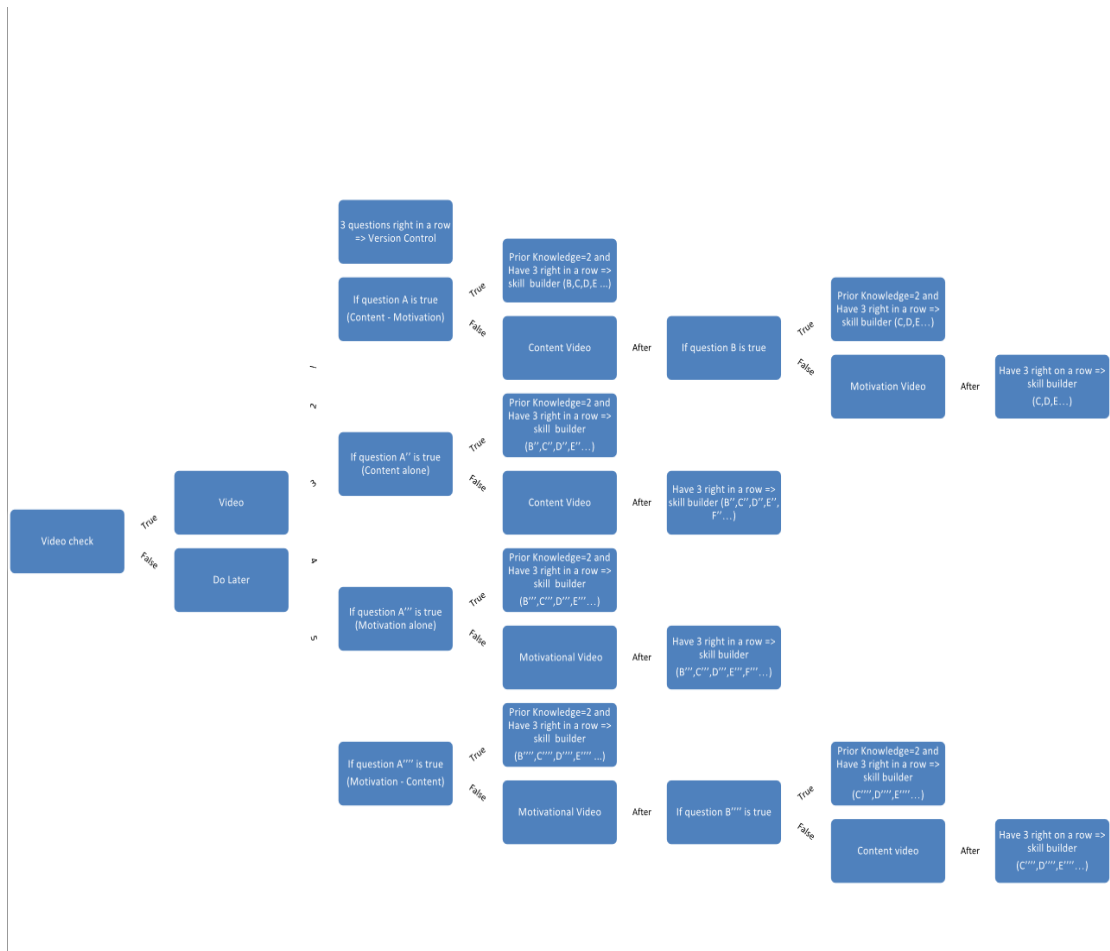


Figure 4.3.2: Design for problem set of motivational study

Motivation Study ...
Video Option
They Passed the v...
Motivation - Content
True
False
After
True
False
After
Content-Motivation
True
False1
After
True
False
After
Motivation alone
True
False
After
Content alone
True
False
After
NoVideo
They Failed the v...
Trans Question

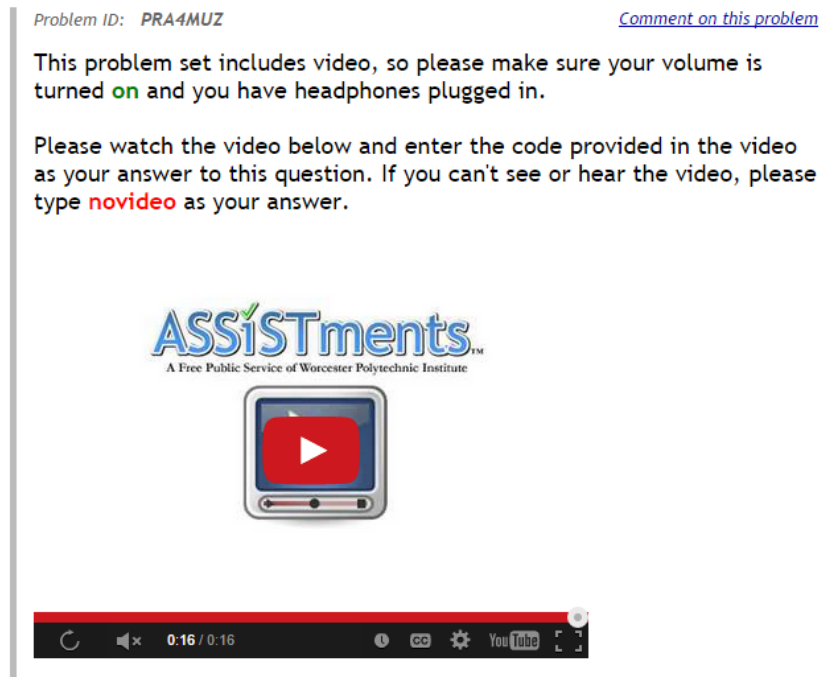
Figure 4.3.2: Design in ASSISTments

4.3.4.2. Video Check

Problem ID: *PRA4MUZ* [Comment on this problem](#)

This problem set includes video, so please make sure your volume is turned **on** and you have headphones plugged in.

Please watch the video below and enter the code provided in the video as your answer to this question. If you can't see or hear the video, please type **novideo** as your answer.



The screenshot shows a video player interface. At the top, it displays the problem ID 'PRA4MUZ' and a link to 'Comment on this problem'. Below this, there are two paragraphs of text: the first asks the user to ensure their volume is on and headphones are plugged in; the second asks the user to watch a video and enter a code from it, or type 'novideo' if they cannot. The video player itself shows the 'ASSISTments' logo, which is a blue and green stylized font with the tagline 'A Free Public Service of Worcester Polytechnic Institute'. Below the logo is a red play button icon on a white background, set within a rounded square frame. At the bottom of the video player, there is a control bar with a progress indicator showing '0:16 / 0:16', a volume icon, a settings gear, and the YouTube logo.

Figure 4.3.3: Video check screenshot

4.3.4.3. Skill Builder

First, we will have video check to check if kids can see videos (some school block YouTube). If Yes then student will be assigned randomly into one of the five conditions:
Condition 1 (No video): If kids have 3 question right in a row then they will finish this assignment

Condition 2 (Content - Motivation):

Case A1: If kids do the first question A right and have prior knowledge = 2 and have 3 question right in a row then they will finish this assignment

Case A2: If kids do the first question A wrong then we will pop up a content video that shows steps of solving problem to help them. After that, they will move to question B:

Case B1: If kids do question B right and have prior knowledge = 2 and 3 question right in a row then they will finish this assignment

Case B2: If kids do question B wrong then we will pop up a motivation video to inspire them. After that, they will move to question C.

Condition 3 (Motivation - Content):

Case A1: If kids do the first question A right and have prior knowledge = 2 and have 3 question right in a row then they will finish this assignment

Case A2: If kids do the first question A wrong then we will pop up a motivation video to inspire them. After that, they will move to question B:

Case B1: If kids do question B right and have prior knowledge = 2 and 3 question right in a row then they will finish this assignment

Case B2: If kids do question B wrong then we will pop up a content video that shows steps of solving problem to help them. After that, they will move to question C.

Condition 4 (Content Alone):

Case A1: If kids do the first question A right and have prior knowledge = 2 and have 3 question right in a row then they will finish this assignment

Case A2: If kids do the first question A wrong then we will pop up a content video that shows steps of solving problem to help them.

Condition 5 (Motivation Alone):

Case A1: If kids do the first question A right and have prior knowledge = 2 and have 3 question right in a row then they will finish this assignment

Case A2: If kids do the first question A wrong then we will pop up a motivation video to inspire them.

4.3.4.4. Problem IDs

Video check: [PRA4MUZ](#)

Problem ID: PRA4MUZ

[Comment on this problem](#)

This problem set includes video, so please make sure your volume is turned **on** and you have headphones plugged in.

Please watch the video below and enter the code provided in the video as your answer to this question. If you can't see or hear the video, please type **novideo** as your answer.



Type your answer below:

Figure 4.3.4: Screenshot of problem PRA4MUZ

1	Motivation - Content	Content- Motivation	Motivation alone	Content Alone	No video	Failed video
2	PRA3X5F	PRA4KB4	PRA4KB5	PRA4KB6	PRA4KB7	PRA4NN7
3	PRA3YAH	PRA4KB8	PRA4KB9	PRA4KCA	PRA4KCB	PRA4NN8
4	PRA3X9A	PRA4KE3	PRA4KE4	PRA4KE5	PRA4KE6	PRA4NQK
5	PRA3X5R	PRA4KDW	PRA4KDX	PRA4KDY	PRA4KDZ	PRA4NQM
6	PRA3X6Q	PRA4KCM	PRA4KCN	PRA4KCP	PRA4KCC	PRA4NPB
7	PRA3X9M	PRA4KGF	PRA4KGG	PRA4KGH	PRA4KGI	PRA4NPF
8	PRA3X89	PRA4KE7	PRA4KE8	PRA4KE9	PRA4KFA	PRA4NPG
9	PRA3X9K	PRA4K GK	PRA4KGM	PRA4KGN	PRA4KGP	PRA4NPH
10	PRA3X5Q	PRA4KD2	PRA4KD3	PRA4KD4	PRA4KD5	PRA4NPJ
11	PRA3X6P	PRA4KCR	PRA4KCS	PRA4KCT	PRA4KCU	PRA4NPK
12	PRA3X9J	PRA4K GQ	PRA4KGR	PRA4KGS	PRA4KGT	PRA4NPM
13	PRA3X88	PRA4KFB	PRA4KFC	PRA4KFD	PRA4KFE	PRA4NPN
14	PRA3YAE	PRA4KCG	PRA4KCH	PRA4KCJ	PRA4KCK	PRA4NPP
15	PRA3X6N	PRA4KCV	PRA4KCW	PRA4KCX	PRA4KCY	PRA4NPQ
16	PRA3X9E	PRA4K G8	PRA4K G9	PRA4KHA	PRA4KHB	PRA4NPR
17	PRA3X6M	PRA4K CZ	PRA4K C2	PRA4K C3	PRA4K C4	PRA4NPS
18	PRA3X5P	PRA4K D6	PRA4K D7	PRA4K D8	PRA4K D9	PRA4NPT
19	PRA3X6K	PRA4K C5	PRA4K C6	PRA4K C7	PRA4K C8	PRA4NPU
20	PRA3X5M	PRA4K EE	PRA4K EF	PRA4K EG	PRA4K EH	PRA4NPV
21	PRA3X87	PRA4K FF	PRA4K FG	PRA4K FH	PRA4K FJ	PRA4NPW
22	PRA3X5J	PRA4K EP	PRA4K EQ	PRA4K ER	PRA4K ES	PRA4NPX
23	PRA3X6J	PRA4K C9	PRA4K DA	PRA4K DB	PRA4K DC	PRA4NPY
24	PRA3X82	PRA4K F7	PRA4K F8	PRA4K F9	PRA4K GA	PRA4NPZ
25	PRA3X5N	PRA4K EA	PRA4K EB	PRA4K EC	PRA4K ED	PRA4NP2
26	PRA3X6H	PRA4K DD	PRA4K DE	PRA4K DF	PRA4K DG	PRA4NP3
27	PRA3X9H	PRA4K GU	PRA4K GV	PRA4K GW	PRA4K GX	PRA4NP4

Figure 4.3.5: Table of ID's. More details [here](#)

Motivation video: PRA4ECA (incomplete)

Content video: PRA4N37 (incomplete)

Order of Problems to Students: see [here](#)

4.3.4.5. Transfer items

Evaluation question: PRA4E7A

More advanced problems: PRA4BB9

At the end of the problem set, the students will be asked to leave evaluations in the following format:

Congratulations on getting three problems correct in a row! This problem set almost done. We want to ask you two questions about your assignment.

1. Did you enjoy these problems?

I enjoyed these problem a lot.

I enjoyed them some.

I did not enjoy them.

1. Did you learn much from these problems?

I think I learned a lot

I think I learn some.

I am not sure if I learned.

Now we are going to ask you two much harder questions that will challenge you. Try use what you learning in this skill builder to answer this and the next question.

4.3.4.5.1. Advance question 1

On Monday Lisa had some nickels. Tuesday, her friend Huadong, gave her 32 more nickels. On Wednesday, she gave her other friend Tamisha 20 nickels so she could buy lunch. Lisa was left with 92 nickels. How many nickels did Lisa start with on Monday?

4.3.4.5.2. Advance question 2

Peter had 19 candies and Peter's friend gave him more candies on his birthday. Peter then gave 3 to his other friend Bob. Now he has 62 candies. How many candies did Peter's friend give him?

4.3.5. Result analysis

We do not have result for this study because we cooperates with other WPI study in this study and she handle about making motivation and content videos. However, we haven't had videos yet so we cannot assign this study for real students

5. Conclusion

The purpose of this project was to design, test and evaluate a series of studies on students' performance on mathematical problems with a variety of study models and topics. The goals of this project, as demonstrated in the preceding sections, were largely met and the design provides an excellent booster for anyone looking to investigate cognitive study on mathematical performance.

Due to the limited time scope the overall IQP, most of the problem sets simply had too few participants to draw statistically significant results. However, a general trend can be observed through all two established studies that visual content has a slightly better advantage over only text content. Furthermore, different types of visual contents can make significant difference as well. More detailed results can be seen in the results subsections of each study.

These are the general conclusions we can make with the limited data we currently possess. These conclusions are about the general trends that were noticed in the results, and should continue to be pursued as more data becomes available.

6. Future Work

These studies will continue to run in ASSISTments for a longer period of time to collect more data. A lot of Excel functions and scripts were used in order to make the mining and analysis of the data dump. These functions are in the spreadsheet of the Result Analysis for each study ([Elapsed Time](#), [Coin values](#)). All of which are well-documented in this report. Additionally, ASSISTments is still under development and will introduce new features and refine their data dump formats. These will undoubtedly make it much simpler in the future to take the data dump from ASSISTments and gather useful information. As ASSISTments gather more and more data, more trends and effects can be observed and researched. Some areas of further research might include possible effects of visual and text feedbacks on different types of mathematical problems. Another possible research is the response to different types of visual content: animation, video, still images, etc.

7. Appendices

7.1. Appendix A - Templates

7.1.1. Coin Values

Problem Set "Motivation Study Problem Set" id:[PSARRVW]

Select All

1) **Problem #PRA4MUZ "PRA4MUZ - Video check"**

This problem set includes video, so please make sure your volume is turned **on** and you have headphones plugged in.

Please watch the video below and enter the code provided in the video as your answer to this question. If you can't see or hear the video, please type **novideo** as your answer.

Fill in:

- ✓ WPI
- ✓ wpi
- ✓ Wpi

2) **Problem #PRA3X5F "PRA3X5F - Join - start unknown 2"**

At the beginning, Isabella had some rubberbands. On her birthday, she got 39 more rubberbands from her mother.

Now, The total number of rubberbands that she has is 65.

How many rubberbands did Isabella have at the beginning?

Algebra:

✓ 26

Hints:

- First draw the 65 rubberbands,

Then erase 39 rubberbands that her mother gave to her

You may want to draw group of ten.

- The number of rubberbands that Isabella have at the beginning is the same as $65 - 39$

$$65 - 39 = 26$$

Type in 26

3) Problem #PRA3YAH "PRA3YAH - Join - start unknown"

On Monday Lisa had some nickels. The next day, her friend gave 31 more nickels to her. Now, she has 75 nickels. How many nickels did Lisa have on Monday?

Algebra:

✓ 44

Hints:

- First draw the 75 nickels,

Then erase 31 nickels that her friend gave to her

You may want to draw group of ten.

- The number of nickels that Lisa have on Monday is the same as $75 - 31$

$$75 - 31 = 44$$

Type in 44

4) Problem #PRA3X9A "PRA3X9A - Separate - change unknown"

Alice had 61 pennies. The next day, she gave some pennies to her friend. Now, she has 20 pennies.

How many pennies did Alice give to her friend?

Algebra:

✓ 41

Hints:

- First, start by drawing the 61 pennies that Alice had at the beginning

Then erase the 20 pennies that she had left

You may want to draw group of ten.

- The number of pennies that Alice gave to her friend is the same as $61 - 20$

$$61 - 20 = 41$$

Type in 41

5) Problem #PRA3X5R "PRA3X5R - Join - start unknown 2"

At the beginning, Jennifer had some marbles. On her birthday, she got 43 more marbles from her mother.

Now, The total number of marbles that she has is 99.

How many marbles did Jennifer have at the beginning?

Algebra:

✓ 56

Hints:

- First draw the 99 marbles,

Then erase 43 marbles that her mother gave to her

You may want to draw group of ten.

- The number of marbles that Jennifer have at the beginning is the same as $99 - 43$

$$99 - 43 = 56$$

Type in 56

6) Problem #PRA3X6Q "PRA3X6Q - Separate - change unknown 2"

Lona had 98 quarters. She used some quarters to buy a snack. Now, she only has 9 quarters.

How many quarters did Lona spend on her snack?

Algebra:

✓ 89

Hints:

- First, start by drawing the 98 quarters that Lona had at the beginning

Then erase the 9 quarters that she had left

You may want to draw group of ten.

- The number of quarters that Lona spent to buy snack is the same as $98 - 9$

$$98 - 9 = 89$$

Type in 89

7) Problem #PRA3X9M "PRA3X9M - Join - change unknown"

Messi had 12 candies and Messi's friend gave him more candies on his birthday. Now he has 53 candies. How many candies did Messi's friend give him?

Algebra:

✓ 41

Hints:

- First draw 53 candies,

Then erase 12 candies that Messi had at the beginning

You may want to draw the group of ten.

- The number of candies that Messi's friend gave him is $53 - 12$

$$53 - 12 = 41$$

Type in 41

8) Problem #PRA3X89 "PRA3X89 - Separate - change unknown"

Mejia had 56 pennies. The next day, she gave some pennies to her friend. Now, she has 21 pennies.

How many pennies did Mejia give to her friend?

Algebra:

✓ 35

Hints:

- First, start by drawing the 56 pennies that Mejia had at the beginning

Then erase the 21 pennies that she had left

You may want to draw group of ten.

- The number of pennies that Mejia gave to her friend is the same as $56 - 21$

$$56 - 21 = 35$$

Type in 35

9) Problem #PRA3X9K "PRA3X9K - Join - change unknown"

Potter had 12 candies and Potter's friend gave him more candies on his birthday. Now he has 58 candies. How many candies did Potter's friend give him?

Algebra:

✓ 46

Hints:

- First draw 58 candies,

Then erase 12 candies that Potter had at the beginning

You may want to draw the group of ten.

- The number of candies that Potter's friend gave him is $58 - 12$

$$58 - 12 = 46$$

Type in 46

10) Problem #PRA3X5Q "PRA3X5Q - Join - start unknown 2"

At the beginning, Swift had some rubberbands. On her birthday, she got 27 more rubberbands from her mother.

Now, The total number of rubberbands that she has is 83.

How many rubberbands did Swift have at the beginning?

Algebra:

✓ 56

Hints:

- First draw the 83 rubberbands,

Then erase 27 rubberbands that her mother gave to her

You may want to draw group of ten.

- The number of rubberbands that Swift have at the beginning is the same as $83 - 27$

$$83 - 27 = 56$$

Type in 56

11) Problem #PRA3X6P "PRA3X6P - Separate - change unknown 2"

Adele had 86 nickels. She used some nickels to buy a snack. Now, she only has 32 nickels.

How many nickels did Adele spend on her snack?

Algebra:

✓ 54

Hints:

- First, start by drawing the 86 nickels that Adele had at the beginning

Then erase the 32 nickels that she had left

You may want to draw group of ten.

- The number of nickels that Adele spent to buy snack is the same as $86 - 32$

$$86 - 32 = 54$$

Type in 54

12) Problem #PRA3X9J "PRA3X9J - Join - change unknown"

Potter had 22 candies and Potter's friend gave him more candies on his birthday. Now he has 55 candies. How many candies did Potter's friend give him?

Algebra:

✓ 33

Hints:

- First draw 55 candies,

Then erase 22 candies that Potter had at the beginning

You may want to draw the group of ten.

- The number of candies that Potter's friend gave him is $55 - 22$

$$55 - 22 = 33$$

Type in 33

13) Problem #PRA3X88 "PRA3X88 - Separate - change unknown"

Lina had 94 dimes. The next day, she gave some dimes to her friend. Now, she has 49 dimes. How many dimes did Lina give to her friend?

Algebra:

✓ 45

Hints:

- First, start by drawing the 94 dimes that Lina had at the beginning

Then erase the 49 dimes that she had left

You may want to draw group of ten.

- The number of dimes that Lina gave to her friend is the same as $94 - 49$

$$94 - 49 = 45$$

Type in 45

14) Problem #PRA3YAE "PRA3YAE - Join - start unknown"

On Monday Alice had some pennies. The next day, her friend gave 34 more pennies to her. Now, she has 95 pennies. How many pennies did Alice have on Monday?

Algebra:

✓ 61

Hints:

- First draw the 95 pennies,

Then erase 34 pennies that her friend gave to her

You may want to draw group of ten.

- The number of pennies that Alice have on Monday is the same as $95 - 34$

$$95 - 34 = 61$$

Type in 61

15) Problem #PRA3X6N "PRA3X6N - Separate - change unknown 2"

Sang had 93 dimes. She used some dimes to buy a snack. Now, she only has 15 dimes. How many dimes did Sang spend on her snack?

Algebra:

✓ 78

Hints:

- First, start by drawing the 93 dimes that Sang had at the beginning

Then erase the 15 dimes that she had left

You may want to draw group of ten.

- The number of dimes that Sang spent to buy snack is the same as $93 - 15$

$$93 - 15 = 78$$

Type in 78

16) Problem #PRA3X9E "PRA3X9E - Join - change unknown"

Cech had 4 candies and Cech's friend gave him more candies on his birthday. Now he has 54 candies. How many candies did Cech's friend give him?

Algebra:

✓ 50

Hints:

- First draw 54 candies,

Then erase 4 candies that Cech had at the beginning

You may want to draw the group of ten.

- The number of candies that Cech's friend gave him is $54 - 4$

$$54 - 4 = 50$$

Type in 50

17) Problem #PRA3X6M "PRA3X6M - Separate - change unknown 2"

Miley had 83 pennies. She used some pennies to buy a snack. Now, she only has 19 pennies. How many pennies did Miley spend on her snack?

Algebra:

✓ 64

Hints:

- First, start by drawing the 83 pennies that Miley had at the beginning

Then erase the 19 pennies that she had left

You may want to draw group of ten.

- The number of pennies that Miley spent to buy snack is the same as $83 - 19$

$$83 - 19 = 64$$

Type in 64

18) Problem #PRA3X5P "PRA3X5P - Join - start unknown 2"

At the beginning, Jennifer had some marbles. On her birthday, she got 2 more marbles from her mother.

Now, The total number of marbles that she has is 87.

How many marbles did Jennifer have at the beginning?

Algebra:

✓ 85

Hints:

- First draw the 87 marbles,

Then erase 2 marbles that her mother gave to her

You may want to draw group of ten.

- The number of marbles that Jennifer have at the beginning is the same as $87 - 2$

$$87 - 2 = 85$$

Type in 85

19) Problem #PRA3X6K "PRA3X6K - Separate - change unknown 2"

Lona had 56 quarters. She used some quarters to buy a snack. Now, she only has 46 quarters. How many quarters did Lona spend on her snack?

Algebra:

✓ 10

Hints:

- First, start by drawing the 56 quarters that Lona had at the beginning

Then erase the 46 quarters that she had left

You may want to draw group of ten.

- The number of quarters that Lona spent to buy snack is the same as $56 - 46$

$$56 - 46 = 10$$

Type in 10

20) Problem #PRA3X5M "PRA3X5M - Join - start unknown 2"

At the beginning, Lona had some clamps. On her birthday, she got 34 more clamps from her mother.

Now, The total number of clamps that she has is 89.

How many clamps did Lona have at the beginning?

Algebra:

✓ 55

Hints:

- First draw the 89 clamps,

Then erase 34 clamps that her mother gave to her

You may want to draw group of ten.

- The number of clamps that Lona have at the beginning is the same as $89 - 34$

$$89 - 34 = 55$$

Type in 55

21) Problem #PRA3X87 "PRA3X87 - Separate - change unknown"

Katherine had 68 nickels. The next day, she gave some nickels to her friend. Now, she has 41 nickels.

How many nickels did Katherine give to her friend?

Algebra:

✓ 27

Hints:

- First, start by drawing the 68 nickels that Katherine had at the beginning

Then erase the 41 nickels that she had left

You may want to draw group of ten.

- The number of nickels that Katherine gave to her friend is the same as $68 - 41$

$$68 - 41 = 27$$

Type in 27

22) Problem #PRA3X5J "PRA3X5J - Join - start unknown 2"

At the beginning, Lan had some clamps. On her birthday, she got 49 more clamps from her mother.

Now, The total number of clamps that she has is 73.

How many clamps did Lan have at the beginning?

Algebra:

✓ 24

Hints:

- First draw the 73 clamps,

Then erase 49 clamps that her mother gave to her

You may want to draw group of ten.

- The number of clamps that Lan have at the beginning is the same as $73 - 49$

$$73 - 49 = 24$$

Type in 24

23) Problem #PRA3X6J "PRA3X6J - Separate - change unknown 2"

Adele had 58 nickels. She used some nickels to buy a snack. Now, she only has 20 nickels. How many nickels did Adele spend on her snack?

Algebra:

✓ 38

Hints:

- First, start by drawing the 58 nickels that Adele had at the beginning

Then erase the 20 nickels that she had left

You may want to draw group of ten.

- The number of nickels that Adele spent to buy snack is the same as $58 - 20$

$$58 - 20 = 38$$

Type in 38

24) Problem #PRA3X82 "PRA3X82 - Separate - change unknown"

Mejia had 91 pennies. The next day, she gave some pennies to her friend. Now, she has 29 pennies.

How many pennies did Mejia give to her friend?

Algebra:

✓ 62

Hints:

- First, start by drawing the 91 pennies that Mejia had at the beginning

Then erase the 29 pennies that she had left

You may want to draw group of ten.

- The number of pennies that Mejia gave to her friend is the same as $91 - 29$

$$91 - 29 = 62$$

Type in 62

25) Problem #PRA3X5N "PRA3X5N - Join - start unknown 2"

At the beginning, Lan had some clamps. On her birthday, she got 20 more clamps from her mother.

Now, The total number of clamps that she has is 90.

How many clamps did Lan have at the beginning?

Algebra:

✓ 70

Hints:

- First draw the 90 clamps,

Then erase 20 clamps that her mother gave to her

You may want to draw group of ten.

- The number of clamps that Lan have at the beginning is the same as $90 - 20$

$$90 - 20 = 70$$

Type in 70

26) Problem #PRA3X6H "PRA3X6H - Separate - change unknown 2"

Lien had 82 pennies. She used some pennies to buy a snack. Now, she only has 13 pennies.

How many pennies did Lien spend on her snack?

Algebra:

✓ 69

Hints:

- First, start by drawing the 82 pennies that Lien had at the beginning

Then erase the 13 pennies that she had left

You may want to draw group of ten.

- The number of pennies that Lien spent to buy snack is the same as $82 - 13$

$$82 - 13 = 69$$

Type in 69

27) Problem #PRA3X9H "PRA3X9H - Join - change unknown"

Messi had 24 candies and Messi's friend gave him more candies on his birthday. Now he has 76 candies. How many candies did Messi's friend give him?

Algebra:

✓ 52

Hints:

- First draw 76 candies,

Then erase 24 candies that Messi had at the beginning

You may want to draw the group of ten.

- The number of candies that Messi's friend gave him is $76 - 24$

$$76 - 24 = 52$$

Type in 52

28) Problem #PRA3X6G "PRA3X6G - Separate - change unknown 2"

Elena had 82 nickels. She used some nickels to buy a snack. Now, she only has 31 nickels. How many nickels did Elena spend on her snack?

Algebra:

✓ 51

Hints:

- First, start by drawing the 82 nickels that Elena had at the beginning

Then erase the 31 nickels that she had left

You may want to draw group of ten.

- The number of nickels that Elena spent to buy snack is the same as $82 - 31$

$$82 - 31 = 51$$

Type in 51

29) Problem #PRA3X84 "PRA3X84 - Separate - change unknown"

Mejia had 63 pennies. The next day, she gave some pennies to her friend. Now, she has 7 pennies.

How many pennies did Mejia give to her friend?

Algebra:

✓ 56

Hints:

- First, start by drawing the 63 pennies that Mejia had at the beginning

Then erase the 7 pennies that she had left

You may want to draw group of ten.

- The number of pennies that Mejia gave to her friend is the same as $63 - 7$

$$63 - 7 = 56$$

Type in 56

30) Problem #PRA3X5H "PRA3X5H - Join - start unknown 2"

At the beginning, Jennifer had some marbles. On her birthday, she got 19 more marbles from her mother.

Now, The total number of marbles that she has is 76.

How many marbles did Jennifer have at the beginning?

Algebra:

✓ 57

Hints:

- First draw the 76 marbles,

Then erase 19 marbles that her mother gave to her

You may want to draw group of ten.

- The number of marbles that Jennifer have at the beginning is the same as $76 - 19$

$$76 - 19 = 57$$

Type in 57

31) Problem #PRA3X8Z "PRA3X8Z - Separate - change unknown"

Alice had 78 pennies. The next day, she gave some pennies to her friend. Now, she has 49 pennies.

How many pennies did Alice give to her friend?

Algebra:

✓ 29

Hints:

- First, start by drawing the 78 pennies that Alice had at the beginning

Then erase the 49 pennies that she had left

You may want to draw group of ten.

- The number of pennies that Alice gave to her friend is the same as $78 - 49$

$$78 - 49 = 29$$

Type in 29

32) Problem #PRA3X6E "PRA3X6E - Separate - change unknown 2"

Lona had 76 quarters. She used some quarters to buy a snack. Now, she only has 13 quarters. How many quarters did Lona spend on her snack?

Algebra:

✓ 63

Hints:

- First, start by drawing the 76 quarters that Lona had at the beginning

Then erase the 13 quarters that she had left

You may want to draw group of ten.

- The number of quarters that Lona spent to buy snack is the same as $76 - 13$

$$76 - 13 = 63$$

Type in 63

33) Problem #PRA3X5K "PRA3X5K - Join - start unknown 2"

At the beginning, Lona had some clamps. On her birthday, she got 30 more clamps from her mother.

Now, The total number of clamps that she has is 87.

How many clamps did Lona have at the beginning?

Algebra:

✓ 57

Hints:

- First draw the 87 clamps,

Then erase 30 clamps that her mother gave to her

You may want to draw group of ten.

- The number of clamps that Lona have at the beginning is the same as $87 - 30$

$$87 - 30 = 57$$

Type in 57

34) Problem #PRA3X83 "PRA3X83 - Separate - change unknown"

Lisa had 74 nickels. The next day, she gave some nickels to her friend. Now, she has 33 nickels. How many nickels did Lisa give to her friend?

Algebra:

✓ 41

Hints:

- First, start by drawing the 74 nickels that Lisa had at the beginning

Then erase the 33 nickels that she had left

You may want to draw group of ten.

- The number of nickels that Lisa gave to her friend is the same as $74 - 33$

$$74 - 33 = 41$$

Type in 41

35) Problem #PRA3X5G "PRA3X5G - Join - start unknown 2"

At the beginning, Isabella had some rubberbands. On her birthday, she got 29 more rubberbands from her mother.

Now, The total number of rubberbands that she has is 96.

How many rubberbands did Isabella have at the beginning?

Algebra:

✓ 67

Hints:

- First draw the 96 rubberbands,

Then erase 29 rubberbands that her mother gave to her

You may want to draw group of ten.

- The number of rubberbands that Isabella have at the beginning is the same as $96 - 29$

$$96 - 29 = 67$$

Type in 67

36) Problem #PRA3X86 "PRA3X86 - Separate - change unknown"

Lisa had 81 nickels. The next day, she gave some nickels to her friend. Now, she has 39 nickels. How many nickels did Lisa give to her friend?

Algebra:

✓ 42

Hints:

- First, start by drawing the 81 nickels that Lisa had at the beginning

Then erase the 39 nickels that she had left

You may want to draw group of ten.

- The number of nickels that Lisa gave to her friend is the same as $81 - 39$

$$81 - 39 = 42$$

Type in 42

37) Problem #PRA3X9F "PRA3X9F - Join - change unknown"

Ronaldo had 19 candies and Ronaldo's friend gave him more candies on his birthday. Now he has 52 candies. How many candies did Ronaldo's friend give him?

Algebra:

✓ 33

Hints:

- First draw 52 candies,

Then erase 19 candies that Ronaldo had at the beginning

You may want to draw the group of ten.

- The number of candies that Ronaldo's friend gave him is $52 - 19$

$$52 - 19 = 33$$

Type in 33

38) Problem #PRA3X85 "PRA3X85 - Separate - change unknown"

Alice had 58 pennies. The next day, she gave some pennies to her friend. Now, she has 36 pennies.

How many pennies did Alice give to her friend?

Algebra:

✓ 22

Hints:

- First, start by drawing the 58 pennies that Alice had at the beginning

Then erase the 36 pennies that she had left

You may want to draw group of ten.

- The number of pennies that Alice gave to her friend is the same as $58 - 36$

$$58 - 36 = 22$$

Type in 22

39) Problem #PRA3X9G "PRA3X9G - Join - change unknown"

Ronaldo had 39 candies and Ronaldo's friend gave him more candies on his birthday. Now he has 62 candies. How many candies did Ronaldo's friend give him?

Algebra:

✓ 23

Hints:

- First draw 62 candies,

Then erase 39 candies that Ronaldo had at the beginning

You may want to draw the group of ten.

- The number of candies that Ronaldo's friend gave him is $62 - 39$

$$62 - 39 = 23$$

Type in 23

40) Problem #PRA3X6F "PRA3X6F - Separate - change unknown 2"

Lien had 51 pennies. She used some pennies to buy a snack. Now, she only has 16 pennies. How many pennies did Lien spend on her snack?

Algebra:

✓ 35

Hints:

- First, start by drawing the 51 pennies that Lien had at the beginning

Then erase the 16 pennies that she had left

You may want to draw group of ten.

- The number of pennies that Lien spent to buy snack is the same as $51 - 16$

$$51 - 16 = 35$$

Type in 35

41) Problem #PRA3YAG "PRA3YAG - Join - start unknown"

On Monday Alice had some pennies. The next day, her friend gave 50 more pennies to her. Now, she has 81 pennies. How many pennies did Alice have on Monday?

Algebra:

✓ 31

Hints:

- First draw the 81 pennies,

Then erase 50 pennies that her friend gave to her

You may want to draw group of ten.

- The number of pennies that Alice have on Monday is the same as $81 - 50$

$$81 - 50 = 31$$

Type in 31

42) Problem #PRA4ECA "PRA4ECA - video"

video to help with the motivation (for Isabella PRA3X5F but this is really irrelevant)

Multiple choice:

✓ I watched the video. I am ready to try another problem.

43) Duplicate problem: Problem #735172 "PRA3YAH - Join - start unknown" was not displayed.

44) Duplicate problem: Problem #735134 "PRA3X9A - Separate - change unknown" was not displayed.

45) Duplicate problem: Problem #735024 "PRA3X5R - Join - start unknown 2" was not displayed.

46) Duplicate problem: Problem #735054 "PRA3X6Q - Separate - change unknown 2" was not displayed.

47) Duplicate problem: Problem #735144 "PRA3X9M - Join - change unknown" was not displayed.

48) Duplicate problem: Problem #735133 "PRA3X89 - Separate - change unknown" was not displayed.

49) Duplicate problem: Problem #735143 "PRA3X9K - Join - change unknown" was not displayed.

50) Duplicate problem: Problem #735023 "PRA3X5Q - Join - start unknown 2" was not displayed.

51) Duplicate problem: Problem #735053 "PRA3X6P - Separate - change unknown 2" was not displayed.

52) Duplicate problem: Problem #735142 "PRA3X9J - Join - change unknown" was not displayed.

53) Duplicate problem: Problem #735132 "PRA3X88 - Separate - change unknown" was not displayed.

54) Duplicate problem: Problem #735169 "PRA3YAE - Join - start unknown" was not displayed.

55) Duplicate problem: Problem #735052 "PRA3X6N - Separate - change unknown 2" was not displayed.

56) Duplicate problem: Problem #735138 "PRA3X9E - Join - change unknown" was not displayed.

57) Duplicate problem: Problem #735051 "PRA3X6M - Separate - change unknown 2" was not displayed.

58) Duplicate problem: Problem #735022 "PRA3X5P - Join - start unknown 2" was not displayed.

59) Duplicate problem: Problem #735050 "PRA3X6K - Separate - change unknown 2" was not displayed.

60) Duplicate problem: Problem #735020 "PRA3X5M - Join - start unknown 2" was not displayed.

61) Duplicate problem: Problem #735131 "PRA3X87 - Separate - change unknown" was not displayed.

62) Duplicate problem: Problem #735018 "PRA3X5J - Join - start unknown 2" was not displayed.

63) Duplicate problem: Problem #735049 "PRA3X6J - Separate - change unknown 2" was not displayed.

64) Duplicate problem: Problem #735126 "PRA3X82 - Separate - change unknown" was not displayed.

65) Duplicate problem: Problem #735021 "PRA3X5N - Join - start unknown 2" was not displayed.

66) Duplicate problem: Problem #735048 "PRA3X6H - Separate - change unknown 2" was not displayed.

67) Duplicate problem: Problem #735141 "PRA3X9H - Join - change unknown" was not displayed.

68) Duplicate problem: Problem #735047 "PRA3X6G - Separate - change unknown 2" was not displayed.

69) Duplicate problem: Problem #735128 "PRA3X84 - Separate - change unknown" was not displayed.

70) Duplicate problem: Problem #735017 "PRA3X5H - Join - start unknown 2" was not displayed.

71) Duplicate problem: Problem #735125 "PRA3X8Z - Separate - change unknown" was not displayed.

72) Duplicate problem: Problem #735045 "PRA3X6E - Separate - change unknown 2" was not displayed.

displayed.

73) Duplicate problem: Problem #735019 "PRA3X5K - Join - start unknown 2" was not displayed.

74) Duplicate problem: Problem #735127 "PRA3X83 - Separate - change unknown" was not displayed.

75) Duplicate problem: Problem #735016 "PRA3X5G - Join - start unknown 2" was not displayed.

76) Duplicate problem: Problem #735130 "PRA3X86 - Separate - change unknown" was not displayed.

77) Duplicate problem: Problem #735139 "PRA3X9F - Join - change unknown" was not displayed.

78) Duplicate problem: Problem #735129 "PRA3X85 - Separate - change unknown" was not displayed.

79) Duplicate problem: Problem #735140 "PRA3X9G - Join - change unknown" was not displayed.

80) Duplicate problem: Problem #735046 "PRA3X6F - Separate - change unknown 2" was not displayed.

81) Duplicate problem: Problem #735171 "PRA3YAG - Join - start unknown" was not displayed.

82) Problem #PRA4N37 "PRA4N37 - video"

video to help with the content

Multiple choice:

I watched the video. I am ready to try another problem.

83) Duplicate problem: Problem #735134 "PRA3X9A - Separate - change unknown" was not displayed.

84) Duplicate problem: Problem #735024 "PRA3X5R - Join - start unknown 2" was not displayed.

85) Duplicate problem: Problem #735054 "PRA3X6Q - Separate - change unknown 2" was not displayed.

86) Duplicate problem: Problem #735144 "PRA3X9M - Join - change unknown" was not displayed.

87) Duplicate problem: Problem #735133 "PRA3X89 - Separate - change unknown" was not displayed.

88) Duplicate problem: Problem #735143 "PRA3X9K - Join - change unknown" was not displayed.

89) Duplicate problem: Problem #735023 "PRA3X5Q - Join - start unknown 2" was not displayed.

90) Duplicate problem: Problem #735053 "PRA3X6P - Separate - change unknown 2" was not displayed.

91) Duplicate problem: Problem #735142 "PRA3X9J - Join - change unknown" was not displayed.

- 92) Duplicate problem: Problem #735132 "PRA3X88 - Separate - change unknown" was not displayed.
- 93) Duplicate problem: Problem #735169 "PRA3YAE - Join - start unknown" was not displayed.
- 94) Duplicate problem: Problem #735052 "PRA3X6N - Separate - change unknown 2" was not displayed.
- 95) Duplicate problem: Problem #735138 "PRA3X9E - Join - change unknown" was not displayed.
- 96) Duplicate problem: Problem #735051 "PRA3X6M - Separate - change unknown 2" was not displayed.
- 97) Duplicate problem: Problem #735022 "PRA3X5P - Join - start unknown 2" was not displayed.
- 98) Duplicate problem: Problem #735050 "PRA3X6K - Separate - change unknown 2" was not displayed.
- 99) Duplicate problem: Problem #735020 "PRA3X5M - Join - start unknown 2" was not displayed.
- 100) Duplicate problem: Problem #735131 "PRA3X87 - Separate - change unknown" was not displayed.
- 101) Duplicate problem: Problem #735018 "PRA3X5J - Join - start unknown 2" was not displayed.
- 102) Duplicate problem: Problem #735049 "PRA3X6J - Separate - change unknown 2" was not displayed.
- 103) Duplicate problem: Problem #735126 "PRA3X82 - Separate - change unknown" was not displayed.
- 104) Duplicate problem: Problem #735021 "PRA3X5N - Join - start unknown 2" was not displayed.
- 105) Duplicate problem: Problem #735048 "PRA3X6H - Separate - change unknown 2" was not displayed.
- 106) Duplicate problem: Problem #735141 "PRA3X9H - Join - change unknown" was not displayed.
- 107) Duplicate problem: Problem #735047 "PRA3X6G - Separate - change unknown 2" was not displayed.
- 108) Duplicate problem: Problem #735128 "PRA3X84 - Separate - change unknown" was not displayed.
- 109) Duplicate problem: Problem #735017 "PRA3X5H - Join - start unknown 2" was not displayed.
- 110) Duplicate problem: Problem #735125 "PRA3X8Z - Separate - change unknown" was not displayed.
- 111) Duplicate problem: Problem #735045 "PRA3X6E - Separate - change unknown 2" was not displayed.
- 112) Duplicate problem: Problem #735019 "PRA3X5K - Join - start unknown 2" was not displayed.
- 113) Duplicate problem: Problem #735127 "PRA3X83 - Separate - change unknown" was not displayed.

displayed.

114) Duplicate problem: Problem #735016 "PRA3X5G - Join - start unknown 2" was not displayed.

115) Duplicate problem: Problem #735130 "PRA3X86 - Separate - change unknown" was not displayed.

116) Duplicate problem: Problem #735139 "PRA3X9F - Join - change unknown" was not displayed.

117) Duplicate problem: Problem #735129 "PRA3X85 - Separate - change unknown" was not displayed.

118) Duplicate problem: Problem #735140 "PRA3X9G - Join - change unknown" was not displayed.

119) Duplicate problem: Problem #735046 "PRA3X6F - Separate - change unknown 2" was not displayed.

120) Duplicate problem: Problem #735171 "PRA3YAG - Join - start unknown" was not displayed.

121) Problem #PRA4KB4 "PRA4KB4 - Join - start unknown 2"

At the beginning, Isabella had some rubberbands. On her birthday, she got 39 more rubberbands from her mother.

Now, The total number of rubberbands that she has is 65.

How many rubberbands did Isabella have at the beginning?

Algebra:

✓ 26

Hints:

- First draw the 65 rubberbands,

Then erase 39 rubberbands that her mother gave to her

You may want to draw group of ten.

- The number of rubberbands that Isabella have at the beginning is the same as $65 - 39$

$$65 - 39 = 26$$

Type in 26

122) Problem #PRA4KB8 "PRA4KB8 - Join - start unknown"

On Monday Lisa had some nickels. The next day, her friend gave 31 more nickels to her. Now, she has 75 nickels. How many nickels did Lisa have on Monday?

Algebra:

✓ 44

Hints:

- First draw the 75 nickels,

Then erase 31 nickels that her friend gave to her

You may want to draw group of ten.

- The number of nickels that Lisa have on Monday is the same as $75 - 31$

$$75 - 31 = 44$$

Type in 44

123) Problem #PRA4KE3 "PRA4KE3 - Separate - change unknown"

Alice had 61 pennies. The next day, she gave some pennies to her friend. Now, she has 20 pennies.

How many pennies did Alice give to her friend?

Algebra:

✓ 41

Hints:

- First, start by drawing the 61 pennies that Alice had at the beginning

Then erase the 20 pennies that she had left

You may want to draw group of ten.

- The number of pennies that Alice gave to her friend is the same as $61 - 20$

$$61 - 20 = 41$$

Type in 41

124) Problem #PRA4KDW "PRA4KDW - Join - start unknown 2"

At the beginning, Jennifer had some marbles. On her birthday, she got 43 more marbles from her mother.

Now, The total number of marbles that she has is 99.

How many marbles did Jennifer have at the beginning?

Algebra:

✓ 56

Hints:

- First draw the 99 marbles,

Then erase 43 marbles that her mother gave to her

You may want to draw group of ten.

- The number of marbles that Jennifer have at the beginning is the same as $99 - 43$

$$99 - 43 = 56$$

Type in 56

125) Problem #PRA4KCM "PRA4KCM - Separate - change unknown 2"

Lona had 98 quarters. She used some quarters to buy a snack. Now, she only has 9 quarters. How many quarters did Lona spend on her snack?

Algebra:

✓ 89

Hints:

- First, start by drawing the 98 quarters that Lona had at the beginning

Then erase the 9 quarters that she had left

You may want to draw group of ten.

- The number of quarters that Lona spent to buy snack is the same as $98 - 9$

$$98 - 9 = 89$$

Type in 89

126) Problem #PRA4KGF "PRA4KGF - Join - change unknown"

Messi had 12 candies and Messi's friend gave him more candies on his birthday. Now he has 53 candies. How many candies did Messi's friend give him?

Algebra:

✓ 41

Hints:

- First draw 53 candies,

Then erase 12 candies that Messi had at the beginning

You may want to draw the group of ten.

- The number of candies that Messi's friend gave him is $53 - 12$

$$53 - 12 = 41$$

Type in 41

127) Problem #PRA4KE7 "PRA4KE7 - Separate - change unknown"

Mejia had 56 pennies. The next day, she gave some pennies to her friend. Now, she has 21 pennies.

How many pennies did Mejia give to her friend?

Algebra:

✓ 35

Hints:

- First, start by drawing the 56 pennies that Mejia had at the beginning

Then erase the 21 pennies that she had left

You may want to draw group of ten.

- The number of pennies that Mejia gave to her friend is the same as $56 - 21$

$$56 - 21 = 35$$

Type in 35

128) Problem #PRA4KGK "PRA4KGK - Join - change unknown"

Potter had 12 candies and Potter's friend gave him more candies on his birthday. Now he has 58 candies. How many candies did Potter's friend give him?

Algebra:

✓ 46

Hints:

- First draw 58 candies,

Then erase 12 candies that Potter had at the beginning

You may want to draw the group of ten.

- The number of candies that Potter's friend gave him is $58 - 12$

$$58 - 12 = 46$$

Type in 46

129) Problem #PRA4KD2 "PRA4KD2 - Join - start unknown 2"

At the beginning, Swift had some rubberbands. On her birthday, she got 27 more rubberbands from her mother.

Now, The total number of rubberbands that she has is 83.

How many rubberbands did Swift have at the beginning?

Algebra:

✓ 56

Hints:

- First draw the 83 rubberbands,

Then erase 27 rubberbands that her mother gave to her

You may want to draw group of ten.

- The number of rubberbands that Swift have at the beginning is the same as $83 - 27$

$$83 - 27 = 56$$

Type in 56

130) Problem #PRA4KCR "PRA4KCR - Separate - change unknown 2"

Adele had 86 nickels. She used some nickels to buy a snack. Now, she only has 32 nickels. How many nickels did Adele spend on her snack?

Algebra:

✓ 54

Hints:

- First, start by drawing the 86 nickels that Adele had at the beginning

Then erase the 32 nickels that she had left

You may want to draw group of ten.

- The number of nickels that Adele spent to buy snack is the same as $86 - 32$

$$86 - 32 = 54$$

Type in 54

131) Problem #PRA4KGQ "PRA4KGQ - Join - change unknown"

Potter had 22 candies and Potter's friend gave him more candies on his birthday. Now he has 55 candies. How many candies did Potter's friend give him?

Algebra:

✓ 33

Hints:

- First draw 55 candies,

Then erase 22 candies that Potter had at the beginning

You may want to draw the group of ten.

- The number of candies that Potter's friend gave him is $55 - 22$

$$55 - 22 = 33$$

Type in 33

132) Problem #PRA4KFB "PRA4KFB - Separate - change unknown"

Lina had 94 dimes. The next day, she gave some dimes to her friend. Now, she has 49 dimes. How many dimes did Lina give to her friend?

Algebra:

✓ 45

Hints:

- First, start by drawing the 94 dimes that Lina had at the beginning

Then erase the 49 dimes that she had left

You may want to draw group of ten.

- The number of dimes that Lina gave to her friend is the same as $94 - 49$

$$94 - 49 = 45$$

Type in 45

133) Problem #PRA4KCG "PRA4KCG - Join - start unknown"

On Monday Alice had some pennies. The next day, her friend gave 34 more pennies to her. Now, she has 95 pennies. How many pennies did Alice have on Monday?

Algebra:

✓ 61

Hints:

- First draw the 95 pennies,

Then erase 34 pennies that her friend gave to her

You may want to draw group of ten.

- The number of pennies that Alice have on Monday is the same as $95 - 34$

$$95 - 34 = 61$$

Type in 61

134) Problem #PRA4KCV "PRA4KCV - Separate - change unknown 2"

Sang had 93 dimes. She used some dimes to buy a snack. Now, she only has 15 dimes. How many dimes did Sang spend on her snack?

Algebra:

✓ 78

Hints:

- First, start by drawing the 93 dimes that Sang had at the beginning

Then erase the 15 dimes that she had left

You may want to draw group of ten.

- The number of dimes that Sang spent to buy snack is the same as $93 - 15$

$$93 - 15 = 78$$

Type in 78

135) Problem #PRA4KG8 "PRA4KG8 - Join - change unknown"

Cech had 4 candies and Cech's friend gave him more candies on his birthday. Now he has 54 candies. How many candies did Cech's friend give him?

Algebra:

✓ 50

Hints:

- First draw 54 candies,

Then erase 4 candies that Cech had at the beginning

You may want to draw the group of ten.

- The number of candies that Cech's friend gave him is $54 - 4$

$$54 - 4 = 50$$

Type in 50

136) Problem #PRA4KCZ "PRA4KCZ - Separate - change unknown 2"

Miley had 83 pennies. She used some pennies to buy a snack. Now, she only has 19 pennies. How many pennies did Miley spend on her snack?

Algebra:

✓ 64

Hints:

- First, start by drawing the 83 pennies that Miley had at the beginning

Then erase the 19 pennies that she had left

You may want to draw group of ten.

- The number of pennies that Miley spent to buy snack is the same as $83 - 19$

$$83 - 19 = 64$$

Type in 64

137) Problem #PRA4KD6 "PRA4KD6 - Join - start unknown 2"

At the beginning, Jennifer had some marbles. On her birthday, she got 2 more marbles from her mother.

Now, The total number of marbles that she has is 87.

How many marbles did Jennifer have at the beginning?

Algebra:

✓ 85

Hints:

- First draw the 87 marbles,

Then erase 2 marbles that her mother gave to her

You may want to draw group of ten.

- The number of marbles that Jennifer have at the beginning is the same as $87 - 2$

$$87 - 2 = 85$$

Type in 85

138) Problem #PRA4KC5 "PRA4KC5 - Separate - change unknown 2"

Lona had 56 quarters. She used some quarters to buy a snack. Now, she only has 46 quarters. How many quarters did Lona spend on her snack?

Algebra:

✓ 10

Hints:

- First, start by drawing the 56 quarters that Lona had at the beginning

Then erase the 46 quarters that she had left

You may want to draw group of ten.

- The number of quarters that Lona spent to buy snack is the same as $56 - 46$

$$56 - 46 = 10$$

Type in 10

139) Problem #PRA4KEE "PRA4KEE - Join - start unknown 2"

At the beginning, Lona had some clamps. On her birthday, she got 34 more clamps from her mother.

Now, The total number of clamps that she has is 89.

How many clamps did Lona have at the beginning?

Algebra:

✓ 55

Hints:

- First draw the 89 clamps,

Then erase 34 clamps that her mother gave to her

You may want to draw group of ten.

- The number of clamps that Lona have at the beginning is the same as $89 - 34$

$$89 - 34 = 55$$

Type in 55

140) Problem #PRA4KFF "PRA4KFF - Separate - change unknown"

Katherine had 68 nickels. The next day, she gave some nickels to her friend. Now, she has 41 nickels.

How many nickels did Katherine give to her friend?

Algebra:

✓ 27

Hints:

- First, start by drawing the 68 nickels that Katherine had at the beginning

Then erase the 41 nickels that she had left

You may want to draw group of ten.

- The number of nickels that Katherine gave to her friend is the same as $68 - 41$

$$68 - 41 = 27$$

Type in 27

141) Problem #PRA4KEP "PRA4KEP - Join - start unknown 2"

At the beginning, Lan had some clamps. On her birthday, she got 49 more clamps from her mother.

Now, The total number of clamps that she has is 73.

How many clamps did Lan have at the beginning?

Algebra:

✓ 24

Hints:

- First draw the 73 clamps,

Then erase 49 clamps that her mother gave to her

You may want to draw group of ten.

- The number of clamps that Lan have at the beginning is the same as $73 - 49$

$$73 - 49 = 24$$

Type in 24

142) Problem #PRA4KC9 "PRA4KC9 - Separate - change unknown 2"

Adele had 58 nickels. She used some nickels to buy a snack. Now, she only has 20 nickels.

How many nickels did Adele spend on her snack?

Algebra:

✓ 38

Hints:

- First, start by drawing the 58 nickels that Adele had at the beginning

Then erase the 20 nickels that she had left

You may want to draw group of ten.

- The number of nickels that Adele spent to buy snack is the same as $58 - 20$

$$58 - 20 = 38$$

Type in 38

143) Problem #PRA4KF7 "PRA4KF7 - Separate - change unknown"

Mejia had 91 pennies. The next day, she gave some pennies to her friend. Now, she has 29 pennies.

How many pennies did Mejia give to her friend?

Algebra:

✓ 62

Hints:

- First, start by drawing the 91 pennies that Mejia had at the beginning

Then erase the 29 pennies that she had left

You may want to draw group of ten.

- The number of pennies that Mejia gave to her friend is the same as $91 - 29$

$$91 - 29 = 62$$

Type in 62

144) Problem #PRA4KEA "PRA4KEA - Join - start unknown 2"

At the beginning, Lan had some clamps. On her birthday, she got 20 more clamps from her mother.

Now, The total number of clamps that she has is 90.

How many clamps did Lan have at the beginning?

Algebra:

✓ 70

Hints:

- First draw the 90 clamps,

Then erase 20 clamps that her mother gave to her

You may want to draw group of ten.

- The number of clamps that Lan have at the beginning is the same as $90 - 20$

$$90 - 20 = 70$$

Type in 70

145) Problem #PRA4KDD "PRA4KDD - Separate - change unknown 2"

Lien had 82 pennies. She used some pennies to buy a snack. Now, she only has 13 pennies.

How many pennies did Lien spend on her snack?

Algebra:

✓ 69

Hints:

- First, start by drawing the 82 pennies that Lien had at the beginning

Then erase the 13 pennies that she had left

You may want to draw group of ten.

- The number of pennies that Lien spent to buy snack is the same as $82 - 13$

$$82 - 13 = 69$$

Type in 69

146) Problem #PRA4KGU "PRA4KGU - Join - change unknown"

Messi had 24 candies and Messi's friend gave him more candies on his birthday. Now he has 76 candies. How many candies did Messi's friend give him?

Algebra:

✓ 52

Hints:

- First draw 76 candies,

Then erase 24 candies that Messi had at the beginning

You may want to draw the group of ten.

- The number of candies that Messi's friend gave him is $76 - 24$

$$76 - 24 = 52$$

Type in 52

147) Problem #PRA4KDH "PRA4KDH - Separate - change unknown 2"

Elena had 82 nickels. She used some nickels to buy a snack. Now, she only has 31 nickels. How many nickels did Elena spend on her snack?

Algebra:

✓ 51

Hints:

- First, start by drawing the 82 nickels that Elena had at the beginning

Then erase the 31 nickels that she had left

You may want to draw group of ten.

- The number of nickels that Elena spent to buy snack is the same as $82 - 31$

$$82 - 31 = 51$$

Type in 51

148) Problem #PRA4KFU "PRA4KFU - Separate - change unknown"

Mejia had 63 pennies. The next day, she gave some pennies to her friend. Now, she has 7 pennies.

How many pennies did Mejia give to her friend?

Algebra:

✓ 56

Hints:

- First, start by drawing the 63 pennies that Mejia had at the beginning

Then erase the 7 pennies that she had left

You may want to draw group of ten.

- The number of pennies that Mejia gave to her friend is the same as $63 - 7$

$$63 - 7 = 56$$

Type in 56

149) Problem #PRA4KET "PRA4KET - Join - start unknown 2"

At the beginning, Jennifer had some marbles. On her birthday, she got 19 more marbles from her mother.

Now, The total number of marbles that she has is 76.

How many marbles did Jennifer have at the beginning?

Algebra:

✓ 57

Hints:

- First draw the 76 marbles,

Then erase 19 marbles that her mother gave to her

You may want to draw group of ten.

- The number of marbles that Jennifer have at the beginning is the same as $76 - 19$

$$76 - 19 = 57$$

Type in 57

150) Problem #PRA4KGB "PRA4KGB - Separate - change unknown"

Alice had 78 pennies. The next day, she gave some pennies to her friend. Now, she has 49 pennies.

How many pennies did Alice give to her friend?

Algebra:

✓ 29

Hints:

- First, start by drawing the 78 pennies that Alice had at the beginning

Then erase the 49 pennies that she had left

You may want to draw group of ten.

- The number of pennies that Alice gave to her friend is the same as $78 - 49$

$$78 - 49 = 29$$

Type in 29

151) Problem #PRA4KDS "PRA4KDS - Separate - change unknown 2"

Lona had 76 quarters. She used some quarters to buy a snack. Now, she only has 13 quarters. How many quarters did Lona spend on her snack?

Algebra:

✓ 63

Hints:

- First, start by drawing the 76 quarters that Lona had at the beginning

Then erase the 13 quarters that she had left

You may want to draw group of ten.

- The number of quarters that Lona spent to buy snack is the same as $76 - 13$

$$76 - 13 = 63$$

Type in 63

152) Problem #PRA4KEJ "PRA4KEJ - Join - start unknown 2"

At the beginning, Lona had some clamps. On her birthday, she got 30 more clamps from her mother.

Now, The total number of clamps that she has is 87.

How many clamps did Lona have at the beginning?

Algebra:

✓ 57

Hints:

- First draw the 87 clamps,

Then erase 30 clamps that her mother gave to her

You may want to draw group of ten.

- The number of clamps that Lona have at the beginning is the same as $87 - 30$

$$87 - 30 = 57$$

Type in 57

153) Problem #PRA4KF3 "PRA4KF3 - Separate - change unknown"

Lisa had 74 nickels. The next day, she gave some nickels to her friend. Now, she has 33 nickels. How many nickels did Lisa give to her friend?

Algebra:

✓ 41

Hints:

- First, start by drawing the 74 nickels that Lisa had at the beginning

Then erase the 33 nickels that she had left

You may want to draw group of ten.

- The number of nickels that Lisa gave to her friend is the same as $74 - 33$

$$74 - 33 = 41$$

Type in 41

154) Problem #PRA4KEX "PRA4KEX - Join - start unknown 2"

At the beginning, Isabella had some rubberbands. On her birthday, she got 29 more rubberbands from her mother.

Now, The total number of rubberbands that she has is 96.

How many rubberbands did Isabella have at the beginning?

Algebra:

✓ 67

Hints:

- First draw the 96 rubberbands,

Then erase 29 rubberbands that her mother gave to her

You may want to draw group of ten.

- The number of rubberbands that Isabella have at the beginning is the same as $96 - 29$

$$96 - 29 = 67$$

Type in 67

155) Problem #PRA4KFK "PRA4KFK - Separate - change unknown"

Lisa had 81 nickels. The next day, she gave some nickels to her friend. Now, she has 39 nickels. How many nickels did Lisa give to her friend?

Algebra:

✓ 42

Hints:

- First, start by drawing the 81 nickels that Lisa had at the beginning

Then erase the 39 nickels that she had left

You may want to draw group of ten.

- The number of nickels that Lisa gave to her friend is the same as $81 - 39$

$$81 - 39 = 42$$

Type in 42

156) Problem #PRA4KG4 "PRA4KG4 - Join - change unknown"

Ronaldo had 19 candies and Ronaldo's friend gave him more candies on his birthday. Now he has 52 candies. How many candies did Ronaldo's friend give him?

Algebra:

✓ 33

Hints:

- First draw 52 candies,

Then erase 19 candies that Ronaldo had at the beginning

You may want to draw the group of ten.

- The number of candies that Ronaldo's friend gave him is $52 - 19$

$$52 - 19 = 33$$

Type in 33

157) Problem #PRA4KFQ "PRA4KFQ - Separate - change unknown"

Alice had 58 pennies. The next day, she gave some pennies to her friend. Now, she has 36 pennies.

How many pennies did Alice give to her friend?

Algebra:

✓ 22

Hints:

- First, start by drawing the 58 pennies that Alice had at the beginning

Then erase the 36 pennies that she had left

You may want to draw group of ten.

- The number of pennies that Alice gave to her friend is the same as $58 - 36$

$$58 - 36 = 22$$

Type in 22

158) Problem #PRA4KGY "PRA4KGY - Join - change unknown"

Ronaldo had 39 candies and Ronaldo's friend gave him more candies on his birthday. Now he has 62 candies. How many candies did Ronaldo's friend give him?

Algebra:

✓ 23

Hints:

- First draw 62 candies,

Then erase 39 candies that Ronaldo had at the beginning

You may want to draw the group of ten.

- The number of candies that Ronaldo's friend gave him is $62 - 39$

$$62 - 39 = 23$$

Type in 23

159) Problem #PRA4KDN "PRA4KDN - Separate - change unknown 2"

Lien had 51 pennies. She used some pennies to buy a snack. Now, she only has 16 pennies. How many pennies did Lien spend on her snack?

Algebra:

✓ 35

Hints:

- First, start by drawing the 51 pennies that Lien had at the beginning

Then erase the 16 pennies that she had left

You may want to draw group of ten.

- The number of pennies that Lien spent to buy snack is the same as $51 - 16$

$$51 - 16 = 35$$

Type in 35

160) Problem #PRA4KCC "PRA4KCC - Join - start unknown"

On Monday Alice had some pennies. The next day, her friend gave 50 more pennies to her. Now, she has 81 pennies. How many pennies did Alice have on Monday?

Algebra:

✓ 31

Hints:

- First draw the 81 pennies,

Then erase 50 pennies that her friend gave to her

You may want to draw group of ten.

- The number of pennies that Alice have on Monday is the same as $81 - 50$

$$81 - 50 = 31$$

Type in 31

161) Duplicate problem: Problem #756118 "PRA4N37 - video" was not displayed.

162) Duplicate problem: Problem #753484 "PRA4KB8 - Join - start unknown" was not

displayed.

163) Duplicate problem: Problem #753572 "PRA4KE3 - Separate - change unknown" was not displayed.

164) Duplicate problem: Problem #753536 "PRA4KDW - Join - start unknown 2" was not displayed.

165) Duplicate problem: Problem #753496 "PRA4KCM - Separate - change unknown 2" was not displayed.

166) Duplicate problem: Problem #753615 "PRA4KGF - Join - change unknown" was not displayed.

167) Duplicate problem: Problem #753576 "PRA4KE7 - Separate - change unknown" was not displayed.

168) Duplicate problem: Problem #753619 "PRA4K GK - Join - change unknown" was not displayed.

169) Duplicate problem: Problem #753540 "PRA4KD2 - Join - start unknown 2" was not displayed.

170) Duplicate problem: Problem #753500 "PRA4KCR - Separate - change unknown 2" was not displayed.

171) Duplicate problem: Problem #753623 "PRA4KGQ - Join - change unknown" was not displayed.

172) Duplicate problem: Problem #753580 "PRA4KFB - Separate - change unknown" was not displayed.

173) Duplicate problem: Problem #753492 "PRA4KCG - Join - start unknown" was not displayed.

174) Duplicate problem: Problem #753504 "PRA4KCV - Separate - change unknown 2" was not displayed.

175) Duplicate problem: Problem #753639 "PRA4KG8 - Join - change unknown" was not displayed.

176) Duplicate problem: Problem #753508 "PRA4KCZ - Separate - change unknown 2" was not displayed.

177) Duplicate problem: Problem #753544 "PRA4KD6 - Join - start unknown 2" was not displayed.

178) Duplicate problem: Problem #753512 "PRA4KC5 - Separate - change unknown 2" was not displayed.

179) Duplicate problem: Problem #753552 "PRA4KEE - Join - start unknown 2" was not displayed.

180) Duplicate problem: Problem #753584 "PRA4KFF - Separate - change unknown" was not displayed.

181) Duplicate problem: Problem #753560 "PRA4KEP - Join - start unknown 2" was not displayed.

182) Duplicate problem: Problem #753516 "PRA4KC9 - Separate - change unknown 2" was not displayed.

183) Duplicate problem: Problem #753607 "PRA4KF7 - Separate - change unknown" was not displayed.

184) Duplicate problem: Problem #753548 "PRA4KEA - Join - start unknown 2" was not displayed.

185) Duplicate problem: Problem #753520 "PRA4KDD - Separate - change unknown 2" was not displayed.

186) Duplicate problem: Problem #753627 "PRA4KGU - Join - change unknown" was not displayed.

187) Duplicate problem: Problem #753524 "PRA4KDH - Separate - change unknown 2" was not displayed.

188) Duplicate problem: Problem #753596 "PRA4KFU - Separate - change unknown" was not displayed.

189) Duplicate problem: Problem #753564 "PRA4KET - Join - start unknown 2" was not displayed.

190) Duplicate problem: Problem #753611 "PRA4KGB - Separate - change unknown" was not displayed.

191) Duplicate problem: Problem #753532 "PRA4KDS - Separate - change unknown 2" was not displayed.

192) Duplicate problem: Problem #753556 "PRA4KEJ - Join - start unknown 2" was not displayed.

193) Duplicate problem: Problem #753603 "PRA4KF3 - Separate - change unknown" was not displayed.

194) Duplicate problem: Problem #753568 "PRA4KEX - Join - start unknown 2" was not displayed.

195) Duplicate problem: Problem #753588 "PRA4KFK - Separate - change unknown" was not displayed.

196) Duplicate problem: Problem #753635 "PRA4KG4 - Join - change unknown" was not displayed.

197) Duplicate problem: Problem #753592 "PRA4KFQ - Separate - change unknown" was not displayed.

198) Duplicate problem: Problem #753631 "PRA4KGY - Join - change unknown" was not displayed.

199) Duplicate problem: Problem #753528 "PRA4KDN - Separate - change unknown 2" was not displayed.

200) Duplicate problem: Problem #753488 "PRA4KCC - Join - start unknown" was not displayed.

201) Duplicate problem: Problem #748681 "PRA4ECA - video" was not displayed.

202) Duplicate problem: Problem #753572 "PRA4KE3 - Separate - change unknown" was not displayed.

203) Duplicate problem: Problem #753536 "PRA4KDW - Join - start unknown 2" was not displayed.

204) Duplicate problem: Problem #753496 "PRA4KCM - Separate - change unknown 2" was not displayed.

205) Duplicate problem: Problem #753615 "PRA4KGF - Join - change unknown" was not displayed.

206) Duplicate problem: Problem #753576 "PRA4KE7 - Separate - change unknown" was not displayed.

207) Duplicate problem: Problem #753619 "PRA4K GK - Join - change unknown" was not displayed.

208) Duplicate problem: Problem #753540 "PRA4KD2 - Join - start unknown 2" was not displayed.

209) Duplicate problem: Problem #753500 "PRA4KCR - Separate - change unknown 2" was not displayed.

210) Duplicate problem: Problem #753623 "PRA4KGQ - Join - change unknown" was not displayed.

211) Duplicate problem: Problem #753580 "PRA4KFB - Separate - change unknown" was not displayed.

212) Duplicate problem: Problem #753492 "PRA4KCG - Join - start unknown" was not displayed.

213) Duplicate problem: Problem #753504 "PRA4KCV - Separate - change unknown 2" was not displayed.

214) Duplicate problem: Problem #753639 "PRA4KG8 - Join - change unknown" was not displayed.

215) Duplicate problem: Problem #753508 "PRA4KCZ - Separate - change unknown 2" was not displayed.

216) Duplicate problem: Problem #753544 "PRA4KD6 - Join - start unknown 2" was not displayed.

217) Duplicate problem: Problem #753512 "PRA4KC5 - Separate - change unknown 2" was not displayed.

218) Duplicate problem: Problem #753552 "PRA4KEE - Join - start unknown 2" was not displayed.

219) Duplicate problem: Problem #753584 "PRA4KFF - Separate - change unknown" was not displayed.

220) Duplicate problem: Problem #753560 "PRA4KEP - Join - start unknown 2" was not displayed.

221) Duplicate problem: Problem #753516 "PRA4KC9 - Separate - change unknown 2" was not displayed.

222) Duplicate problem: Problem #753607 "PRA4KF7 - Separate - change unknown" was not displayed.

223) Duplicate problem: Problem #753548 "PRA4KEA - Join - start unknown 2" was not displayed.

224) Duplicate problem: Problem #753520 "PRA4KDD - Separate - change unknown 2" was not displayed.

225) Duplicate problem: Problem #753627 "PRA4K GU - Join - change unknown" was not displayed.

226) Duplicate problem: Problem #753524 "PRA4KDH - Separate - change unknown 2" was not displayed.

227) Duplicate problem: Problem #753596 "PRA4KFU - Separate - change unknown" was not

displayed.

228) Duplicate problem: Problem #753564 "PRA4KET - Join - start unknown 2" was not displayed.

229) Duplicate problem: Problem #753611 "PRA4KGB - Separate - change unknown" was not displayed.

230) Duplicate problem: Problem #753532 "PRA4KDS - Separate - change unknown 2" was not displayed.

231) Duplicate problem: Problem #753556 "PRA4KEJ - Join - start unknown 2" was not displayed.

232) Duplicate problem: Problem #753603 "PRA4KF3 - Separate - change unknown" was not displayed.

233) Duplicate problem: Problem #753568 "PRA4KEX - Join - start unknown 2" was not displayed.

234) Duplicate problem: Problem #753588 "PRA4KFK - Separate - change unknown" was not displayed.

235) Duplicate problem: Problem #753635 "PRA4KG4 - Join - change unknown" was not displayed.

236) Duplicate problem: Problem #753592 "PRA4KFQ - Separate - change unknown" was not displayed.

237) Duplicate problem: Problem #753631 "PRA4KGY - Join - change unknown" was not displayed.

238) Duplicate problem: Problem #753528 "PRA4KDN - Separate - change unknown 2" was not displayed.

239) Duplicate problem: Problem #753488 "PRA4KCC - Join - start unknown" was not displayed.

240) Problem #PRA4KB5 "PRA4KB5 - Join - start unknown 2"

At the beginning, Isabella had some rubberbands. On her birthday, she got 39 more rubberbands from her mother.

Now, The total number of rubberbands that she has is 65.

How many rubberbands did Isabella have at the beginning?

Algebra:

✓ 26

Hints:

- First draw the 65 rubberbands,

Then erase 39 rubberbands that her mother gave to her

You may want to draw group of ten.

- The number of rubberbands that Isabella have at the beginning is the same as $65 - 39$

$$65 - 39 = 26$$

Type in 26

241) Problem #PRA4KB9 "PRA4KB9 - Join - start unknown"

On Monday Lisa had some nickels. The next day, her friend gave 31 more nickels to her. Now, she has 75 nickels. How many nickels did Lisa have on Monday?

Algebra:

✓ 44

Hints:

- First draw the 75 nickels,

Then erase 31 nickels that her friend gave to her

You may want to draw group of ten.

- The number of nickels that Lisa have on Monday is the same as $75 - 31$

$$75 - 31 = 44$$

Type in 44

242) Problem #PRA4KE4 "PRA4KE4 - Separate - change unknown"

Alice had 61 pennies. The next day, she gave some pennies to her friend. Now, she has 20 pennies.

How many pennies did Alice give to her friend?

Algebra:

✓ 41

Hints:

- First, start by drawing the 61 pennies that Alice had at the beginning

Then erase the 20 pennies that she had left

You may want to draw group of ten.

- The number of pennies that Alice gave to her friend is the same as $61 - 20$

$$61 - 20 = 41$$

Type in 41

243) Problem #PRA4KDX "PRA4KDX - Join - start unknown 2"

At the beginning, Jennifer had some marbles. On her birthday, she got 43 more marbles from her mother.

Now, The total number of marbles that she has is 99.

How many marbles did Jennifer have at the beginning?

Algebra:

✓ 56

Hints:

- First draw the 99 marbles,

Then erase 43 marbles that her mother gave to her

You may want to draw group of ten.

- The number of marbles that Jennifer have at the beginning is the same as $99 - 43$

$$99 - 43 = 56$$

Type in 56

244) Problem #PRA4KCN "PRA4KCN - Separate - change unknown 2"

Lona had 98 quarters. She used some quarters to buy a snack. Now, she only has 9 quarters. How many quarters did Lona spend on her snack?

Algebra:

✓ 89

Hints:

- First, start by drawing the 98 quarters that Lona had at the beginning

Then erase the 9 quarters that she had left

You may want to draw group of ten.

- The number of quarters that Lona spent to buy snack is the same as $98 - 9$

$$98 - 9 = 89$$

Type in 89

245) Problem #PRA4KGG "PRA4KGG - Join - change unknown"

Messi had 12 candies and Messi's friend gave him more candies on his birthday. Now he has 53 candies. How many candies did Messi's friend give him?

Algebra:

✓ 41

Hints:

- First draw 53 candies,

Then erase 12 candies that Messi had at the beginning

You may want to draw the group of ten.

- The number of candies that Messi's friend gave him is $53 - 12$

$$53 - 12 = 41$$

Type in 41

246) Problem #PRA4KE8 "PRA4KE8 - Separate - change unknown"

Mejia had 56 pennies. The next day, she gave some pennies to her friend. Now, she has 21 pennies.

How many pennies did Mejia give to her friend?

Algebra:

✓ 35

Hints:

- First, start by drawing the 56 pennies that Mejia had at the beginning

Then erase the 21 pennies that she had left

You may want to draw group of ten.

- The number of pennies that Mejia gave to her friend is the same as $56 - 21$

$$56 - 21 = 35$$

Type in 35

247) Problem #PRA4KGM "PRA4KGM - Join - change unknown"

Potter had 12 candies and Potter's friend gave him more candies on his birthday. Now he has 58 candies. How many candies did Potter's friend give him?

Algebra:

✓ 46

Hints:

- First draw 58 candies,

Then erase 12 candies that Potter had at the beginning

You may want to draw the group of ten.

- The number of candies that Potter's friend gave him is $58 - 12$

$$58 - 12 = 46$$

Type in 46

248) Problem #PRA4KD3 "PRA4KD3 - Join - start unknown 2"

At the beginning, Swift had some rubberbands. On her birthday, she got 27 more rubberbands from her mother.

Now, The total number of rubberbands that she has is 83.

How many rubberbands did Swift have at the beginning?

Algebra:

✓ 56

Hints:

- First draw the 83 rubberbands,

Then erase 27 rubberbands that her mother gave to her

You may want to draw group of ten.

- The number of rubberbands that Swift have at the beginning is the same as $83 - 27$

$$83 - 27 = 56$$

Type in 56

249) Problem #PRA4KCS "PRA4KCS - Separate - change unknown 2"

Adele had 86 nickels. She used some nickels to buy a snack. Now, she only has 32 nickels. How many nickels did Adele spend on her snack?

Algebra:

✓ 54

Hints:

- First, start by drawing the 86 nickels that Adele had at the beginning

Then erase the 32 nickels that she had left

You may want to draw group of ten.

- The number of nickels that Adele spent to buy snack is the same as $86 - 32$

$$86 - 32 = 54$$

Type in 54

250) Problem #PRA4KGR "PRA4KGR - Join - change unknown"

Potter had 22 candies and Potter's friend gave him more candies on his birthday. Now he has 55 candies. How many candies did Potter's friend give him?

Algebra:

✓ 33

Hints:

- First draw 55 candies,

Then erase 22 candies that Potter had at the beginning

You may want to draw the group of ten.

- The number of candies that Potter's friend gave him is $55 - 22$

$$55 - 22 = 33$$

Type in 33

251) Problem #PRA4KFC "PRA4KFC - Separate - change unknown"

Lina had 94 dimes. The next day, she gave some dimes to her friend. Now, she has 49 dimes. How many dimes did Lina give to her friend?

Algebra:

✓ 45

Hints:

- First, start by drawing the 94 dimes that Lina had at the beginning

Then erase the 49 dimes that she had left

You may want to draw group of ten.

- The number of dimes that Lina gave to her friend is the same as $94 - 49$

$$94 - 49 = 45$$

Type in 45

252) Problem #PRA4KCH "PRA4KCH - Join - start unknown"

On Monday Alice had some pennies. The next day, her friend gave 34 more pennies to her. Now, she has 95 pennies. How many pennies did Alice have on Monday?

Algebra:

✓ 61

Hints:

- First draw the 95 pennies,

Then erase 34 pennies that her friend gave to her

You may want to draw group of ten.

- The number of pennies that Alice have on Monday is the same as $95 - 34$

$$95 - 34 = 61$$

Type in 61

253) Problem #PRA4KCW "PRA4KCW - Separate - change unknown 2"

Sang had 93 dimes. She used some dimes to buy a snack. Now, she only has 15 dimes. How many dimes did Sang spend on her snack?

Algebra:

✓ 78

Hints:

- First, start by drawing the 93 dimes that Sang had at the beginning

Then erase the 15 dimes that she had left

You may want to draw group of ten.

- The number of dimes that Sang spent to buy snack is the same as $93 - 15$

$$93 - 15 = 78$$

Type in 78

254) Problem #PRA4KG9 "PRA4KG9 - Join - change unknown"

Cech had 4 candies and Cech's friend gave him more candies on his birthday. Now he has 54 candies. How many candies did Cech's friend give him?

Algebra:

✓ 50

Hints:

- First draw 54 candies,

Then erase 4 candies that Cech had at the beginning

You may want to draw the group of ten.

- The number of candies that Cech's friend gave him is $54 - 4$

$$54 - 4 = 50$$

Type in 50

255) Problem #PRA4KC2 "PRA4KC2 - Separate - change unknown 2"

Miley had 83 pennies. She used some pennies to buy a snack. Now, she only has 19 pennies. How many pennies did Miley spend on her snack?

Algebra:

✓ 64

Hints:

- First, start by drawing the 83 pennies that Miley had at the beginning

Then erase the 19 pennies that she had left

You may want to draw group of ten.

- The number of pennies that Miley spent to buy snack is the same as $83 - 19$

$$83 - 19 = 64$$

Type in 64

256) Problem #PRA4KD7 "PRA4KD7 - Join - start unknown 2"

At the beginning, Jennifer had some marbles. On her birthday, she got 2 more marbles from her mother.

Now, The total number of marbles that she has is 87.

How many marbles did Jennifer have at the beginning?

Algebra:

✓ 85

Hints:

- First draw the 87 marbles,

Then erase 2 marbles that her mother gave to her

You may want to draw group of ten.

- The number of marbles that Jennifer have at the beginning is the same as $87 - 2$

$$87 - 2 = 85$$

Type in 85

257) Problem #PRA4KC6 "PRA4KC6 - Separate - change unknown 2"

Lona had 56 quarters. She used some quarters to buy a snack. Now, she only has 46 quarters. How many quarters did Lona spend on her snack?

Algebra:

✓ 10

Hints:

- First, start by drawing the 56 quarters that Lona had at the beginning

Then erase the 46 quarters that she had left

You may want to draw group of ten.

- The number of quarters that Lona spent to buy snack is the same as $56 - 46$

$$56 - 46 = 10$$

Type in 10

258) Problem #PRA4KEF "PRA4KEF - Join - start unknown 2"

At the beginning, Lona had some clamps. On her birthday, she got 34 more clamps from her mother.

Now, The total number of clamps that she has is 89.

How many clamps did Lona have at the beginning?

Algebra:

✓ 55

Hints:

- First draw the 89 clamps,

Then erase 34 clamps that her mother gave to her

You may want to draw group of ten.

- The number of clamps that Lona have at the beginning is the same as $89 - 34$

$$89 - 34 = 55$$

Type in 55

259) Problem #PRA4KFG "PRA4KFG - Separate - change unknown"

Katherine had 68 nickels. The next day, she gave some nickels to her friend. Now, she has 41 nickels.

How many nickels did Katherine give to her friend?

Algebra:

✓ 27

Hints:

- First, start by drawing the 68 nickels that Katherine had at the beginning

Then erase the 41 nickels that she had left

You may want to draw group of ten.

- The number of nickels that Katherine gave to her friend is the same as $68 - 41$

$$68 - 41 = 27$$

Type in 27

260) Problem #PRA4KEQ "PRA4KEQ - Join - start unknown 2"

At the beginning, Lan had some clamps. On her birthday, she got 49 more clamps from her mother.

Now, The total number of clamps that she has is 73.

How many clamps did Lan have at the beginning?

Algebra:

✓ 24

Hints:

- First draw the 73 clamps,

Then erase 49 clamps that her mother gave to her

You may want to draw group of ten.

- The number of clamps that Lan have at the beginning is the same as $73 - 49$

$$73 - 49 = 24$$

Type in 24

261) Problem #PRA4KDA "PRA4KDA - Separate - change unknown 2"

Adele had 58 nickels. She used some nickels to buy a snack. Now, she only has 20 nickels. How many nickels did Adele spend on her snack?

Algebra:

✓ 38

Hints:

- First, start by drawing the 58 nickels that Adele had at the beginning

Then erase the 20 nickels that she had left

You may want to draw group of ten.

- The number of nickels that Adele spent to buy snack is the same as $58 - 20$

$$58 - 20 = 38$$

Type in 38

262) Problem #PRA4KF8 "PRA4KF8 - Separate - change unknown"

Mejia had 91 pennies. The next day, she gave some pennies to her friend. Now, she has 29 pennies.

How many pennies did Mejia give to her friend?

Algebra:

✓ 62

Hints:

- First, start by drawing the 91 pennies that Mejia had at the beginning

Then erase the 29 pennies that she had left

You may want to draw group of ten.

- The number of pennies that Mejia gave to her friend is the same as $91 - 29$

$$91 - 29 = 62$$

Type in 62

263) Problem #PRA4KEB "PRA4KEB - Join - start unknown 2"

At the beginning, Lan had some clamps. On her birthday, she got 20 more clamps from her mother.

Now, The total number of clamps that she has is 90.

How many clamps did Lan have at the beginning?

Algebra:

✓ 70

Hints:

- First draw the 90 clamps,

Then erase 20 clamps that her mother gave to her

You may want to draw group of ten.

- The number of clamps that Lan have at the beginning is the same as $90 - 20$

$$90 - 20 = 70$$

Type in 70

264) Problem #PRA4KDE "PRA4KDE - Separate - change unknown 2"

Lien had 82 pennies. She used some pennies to buy a snack. Now, she only has 13 pennies. How many pennies did Lien spend on her snack?

Algebra:

✓ 69

Hints:

- First, start by drawing the 82 pennies that Lien had at the beginning

Then erase the 13 pennies that she had left

You may want to draw group of ten.

- The number of pennies that Lien spent to buy snack is the same as $82 - 13$

$$82 - 13 = 69$$

Type in 69

265) Problem #PRA4KGV "PRA4KGV - Join - change unknown"

Messi had 24 candies and Messi's friend gave him more candies on his birthday. Now he has 76 candies. How many candies did Messi's friend give him?

Algebra:

✓ 52

Hints:

- First draw 76 candies,

Then erase 24 candies that Messi had at the beginning

You may want to draw the group of ten.

- The number of candies that Messi's friend gave him is $76 - 24$

$$76 - 24 = 52$$

Type in 52

266) Problem #PRA4KDJ "PRA4KDJ - Separate - change unknown 2"

Elena had 82 nickels. She used some nickels to buy a snack. Now, she only has 31 nickels. How many nickels did Elena spend on her snack?

Algebra:

✓ 51

Hints:

- First, start by drawing the 82 nickels that Elena had at the beginning

Then erase the 31 nickels that she had left

You may want to draw group of ten.

- The number of nickels that Elena spent to buy snack is the same as $82 - 31$

$$82 - 31 = 51$$

Type in 51

267) Problem #PRA4KFV "PRA4KFV - Separate - change unknown"

Mejia had 63 pennies. The next day, she gave some pennies to her friend. Now, she has 7 pennies.

How many pennies did Mejia give to her friend?

Algebra:

✓ 56

Hints:

- First, start by drawing the 63 pennies that Mejia had at the beginning

Then erase the 7 pennies that she had left

You may want to draw group of ten.

- The number of pennies that Mejia gave to her friend is the same as $63 - 7$

$$63 - 7 = 56$$

Type in 56

268) Problem #PRA4KEU "PRA4KEU - Join - start unknown 2"

At the beginning, Jennifer had some marbles. On her birthday, she got 19 more marbles from her mother.

Now, The total number of marbles that she has is 76.

How many marbles did Jennifer have at the beginning?

Algebra:

✓ 57

Hints:

- First draw the 76 marbles,

Then erase 19 marbles that her mother gave to her

You may want to draw group of ten.

- The number of marbles that Jennifer have at the beginning is the same as $76 - 19$

$$76 - 19 = 57$$

Type in 57

269) Problem #PRA4KGC "PRA4KGC - Separate - change unknown"

Alice had 78 pennies. The next day, she gave some pennies to her friend. Now, she has 49 pennies.

How many pennies did Alice give to her friend?

Algebra:

✓ 29

Hints:

- First, start by drawing the 78 pennies that Alice had at the beginning

Then erase the 49 pennies that she had left

You may want to draw group of ten.

- The number of pennies that Alice gave to her friend is the same as $78 - 49$

$$78 - 49 = 29$$

Type in 29

270) Problem #PRA4KDT "PRA4KDT - Separate - change unknown 2"

Lona had 76 quarters. She used some quarters to buy a snack. Now, she only has 13 quarters. How many quarters did Lona spend on her snack?

Algebra:

✓ 63

Hints:

- First, start by drawing the 76 quarters that Lona had at the beginning

Then erase the 13 quarters that she had left

You may want to draw group of ten.

- The number of quarters that Lona spent to buy snack is the same as $76 - 13$

$$76 - 13 = 63$$

Type in 63

271) Problem #PRA4KEK "PRA4KEK - Join - start unknown 2"

At the beginning, Lona had some clamps. On her birthday, she got 30 more clamps from her mother.

Now, The total number of clamps that she has is 87.

How many clamps did Lona have at the beginning?

Algebra:

✓ 57

Hints:

- First draw the 87 clamps,

Then erase 30 clamps that her mother gave to her

You may want to draw group of ten.

- The number of clamps that Lona have at the beginning is the same as $87 - 30$

$$87 - 30 = 57$$

Type in 57

272) Problem #PRA4KF4 "PRA4KF4 - Separate - change unknown"

Lisa had 74 nickels. The next day, she gave some nickels to her friend. Now, she has 33 nickels.

How many nickels did Lisa give to her friend?

Algebra:

✓ 41

Hints:

- First, start by drawing the 74 nickels that Lisa had at the beginning

Then erase the 33 nickels that she had left

You may want to draw group of ten.

- The number of nickels that Lisa gave to her friend is the same as $74 - 33$

$$74 - 33 = 41$$

Type in 41

273) Problem #PRA4KEY "PRA4KEY - Join - start unknown 2"

At the beginning, Isabella had some rubberbands. On her birthday, she got 29 more rubberbands from her mother.

Now, The total number of rubberbands that she has is 96.

How many rubberbands did Isabella have at the beginning?

Algebra:

✓ 67

Hints:

- First draw the 96 rubberbands,

Then erase 29 rubberbands that her mother gave to her

You may want to draw group of ten.

- The number of rubberbands that Isabella have at the beginning is the same as $96 - 29$

$$96 - 29 = 67$$

Type in 67

274) Problem #PRA4KFM "PRA4KFM - Separate - change unknown"

Lisa had 81 nickels. The next day, she gave some nickels to her friend. Now, she has 39 nickels. How many nickels did Lisa give to her friend?

Algebra:

✓ 42

Hints:

- First, start by drawing the 81 nickels that Lisa had at the beginning

Then erase the 39 nickels that she had left

You may want to draw group of ten.

- The number of nickels that Lisa gave to her friend is the same as $81 - 39$

$$81 - 39 = 42$$

Type in 42

275) Problem #PRA4KG5 "PRA4KG5 - Join - change unknown"

Ronaldo had 19 candies and Ronaldo's friend gave him more candies on his birthday. Now he has 52 candies. How many candies did Ronaldo's friend give him?

Algebra:

✓ 33

Hints:

- First draw 52 candies,

Then erase 19 candies that Ronaldo had at the beginning

You may want to draw the group of ten.

- The number of candies that Ronaldo's friend gave him is $52 - 19$

$$52 - 19 = 33$$

Type in 33

276) Problem #PRA4KFR "PRA4KFR - Separate - change unknown"

Alice had 58 pennies. The next day, she gave some pennies to her friend. Now, she has 36 pennies.

How many pennies did Alice give to her friend?

Algebra:

✓ 22

Hints:

- First, start by drawing the 58 pennies that Alice had at the beginning

Then erase the 36 pennies that she had left

You may want to draw group of ten.

- The number of pennies that Alice gave to her friend is the same as $58 - 36$

$$58 - 36 = 22$$

Type in 22

277) Problem #PRA4KGZ "PRA4KGZ - Join - change unknown"

Ronaldo had 39 candies and Ronaldo's friend gave him more candies on his birthday. Now he has 62 candies. How many candies did Ronaldo's friend give him?

Algebra:

✓ 23

Hints:

- First draw 62 candies,

Then erase 39 candies that Ronaldo had at the beginning

You may want to draw the group of ten.

- The number of candies that Ronaldo's friend gave him is $62 - 39$

$$62 - 39 = 23$$

Type in 23

278) Problem #PRA4KDP "PRA4KDP - Separate - change unknown 2"

Lien had 51 pennies. She used some pennies to buy a snack. Now, she only has 16 pennies. How many pennies did Lien spend on her snack?

Algebra:

✓ 35

Hints:

- First, start by drawing the 51 pennies that Lien had at the beginning

Then erase the 16 pennies that she had left

You may want to draw group of ten.

- The number of pennies that Lien spent to buy snack is the same as $51 - 16$

$$51 - 16 = 35$$

Type in 35

279) Problem #PRA4KCD "PRA4KCD - Join - start unknown"

On Monday Alice had some pennies. The next day, her friend gave 50 more pennies to her. Now, she has 81 pennies. How many pennies did Alice have on Monday?

Algebra:

✓ 31

Hints:

- First draw the 81 pennies,

Then erase 50 pennies that her friend gave to her

You may want to draw group of ten.

- The number of pennies that Alice have on Monday is the same as $81 - 50$

$$81 - 50 = 31$$

Type in 31

280) Duplicate problem: Problem #748681 "PRA4ECA - video" was not displayed.

281) Duplicate problem: Problem #753485 "PRA4KB9 - Join - start unknown" was not displayed.

282) Duplicate problem: Problem #753573 "PRA4KE4 - Separate - change unknown" was not displayed.

283) Duplicate problem: Problem #753537 "PRA4KDX - Join - start unknown 2" was not displayed.

284) Duplicate problem: Problem #753497 "PRA4KCN - Separate - change unknown 2" was not displayed.

285) Duplicate problem: Problem #753616 "PRA4KGG - Join - change unknown" was not displayed.

286) Duplicate problem: Problem #753577 "PRA4KE8 - Separate - change unknown" was not displayed.

287) Duplicate problem: Problem #753620 "PRA4KGM - Join - change unknown" was not displayed.

288) Duplicate problem: Problem #753541 "PRA4KD3 - Join - start unknown 2" was not displayed.

289) Duplicate problem: Problem #753501 "PRA4KCS - Separate - change unknown 2" was not displayed.

290) Duplicate problem: Problem #753624 "PRA4KGR - Join - change unknown" was not displayed.

291) Duplicate problem: Problem #753581 "PRA4KFC - Separate - change unknown" was not displayed.

292) Duplicate problem: Problem #753493 "PRA4KCH - Join - start unknown" was not displayed.

293) Duplicate problem: Problem #753505 "PRA4KCW - Separate - change unknown 2" was not displayed.

294) Duplicate problem: Problem #753640 "PRA4KG9 - Join - change unknown" was not displayed.

295) Duplicate problem: Problem #753509 "PRA4KC2 - Separate - change unknown 2" was not displayed.

296) Duplicate problem: Problem #753545 "PRA4KD7 - Join - start unknown 2" was not displayed.

297) Duplicate problem: Problem #753513 "PRA4KC6 - Separate - change unknown 2" was not displayed.

298) Duplicate problem: Problem #753553 "PRA4KEF - Join - start unknown 2" was not displayed.

299) Duplicate problem: Problem #753585 "PRA4KFG - Separate - change unknown" was not displayed.

300) Duplicate problem: Problem #753561 "PRA4KEQ - Join - start unknown 2" was not displayed.

301) Duplicate problem: Problem #753517 "PRA4KDA - Separate - change unknown 2" was not displayed.

302) Duplicate problem: Problem #753608 "PRA4KF8 - Separate - change unknown" was not displayed.

303) Duplicate problem: Problem #753549 "PRA4KEB - Join - start unknown 2" was not displayed.

304) Duplicate problem: Problem #753521 "PRA4KDE - Separate - change unknown 2" was not displayed.

305) Duplicate problem: Problem #753628 "PRA4KGV - Join - change unknown" was not displayed.

306) Duplicate problem: Problem #753525 "PRA4KDJ - Separate - change unknown 2" was not displayed.

307) Duplicate problem: Problem #753597 "PRA4KJV - Separate - change unknown" was not displayed.

308) Duplicate problem: Problem #753565 "PRA4KEU - Join - start unknown 2" was not displayed.

309) Duplicate problem: Problem #753612 "PRA4KGC - Separate - change unknown" was not displayed.

310) Duplicate problem: Problem #753533 "PRA4KDT - Separate - change unknown 2" was not displayed.

311) Duplicate problem: Problem #753557 "PRA4KEK - Join - start unknown 2" was not displayed.

312) Duplicate problem: Problem #753604 "PRA4KF4 - Separate - change unknown" was not displayed.

313) Duplicate problem: Problem #753569 "PRA4KEY - Join - start unknown 2" was not displayed.

314) Duplicate problem: Problem #753589 "PRA4KFM - Separate - change unknown" was not displayed.

315) Duplicate problem: Problem #753636 "PRA4KG5 - Join - change unknown" was not displayed.

316) Duplicate problem: Problem #753593 "PRA4KFR - Separate - change unknown" was not displayed.

317) Duplicate problem: Problem #753632 "PRA4KGZ - Join - change unknown" was not displayed.

318) Duplicate problem: Problem #753529 "PRA4KDP - Separate - change unknown 2" was not displayed.

319) Duplicate problem: Problem #753489 "PRA4KCD - Join - start unknown" was not displayed.

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320) Problem #PRA4KB6 "PRA4KB6 - Join - start unknown 2"

At the beginning, Isabella had some rubberbands. On her birthday, she got 39 more rubberbands from her mother.

Now, The total number of rubberbands that she has is 65.

How many rubberbands did Isabella have at the beginning?

Algebra:

✓ 26

Hints:

- First draw the 65 rubberbands,

Then erase 39 rubberbands that her mother gave to her

You may want to draw group of ten.

- The number of rubberbands that Isabella have at the beginning is the same as $65 - 39$

$$65 - 39 = 26$$

Type in 26

321) Problem #PRA4KCA "PRA4KCA - Join - start unknown"

On Monday Lisa had some nickels. The next day, her friend gave 31 more nickels to her. Now, she has 75 nickels. How many nickels did Lisa have on Monday?

Algebra:

✓ 44

Hints:

- First draw the 75 nickels,

Then erase 31 nickels that her friend gave to her

You may want to draw group of ten.

- The number of nickels that Lisa have on Monday is the same as $75 - 31$

$$75 - 31 = 44$$

Type in 44

322) Problem #PRA4KE5 "PRA4KE5 - Separate - change unknown"

Alice had 61 pennies. The next day, she gave some pennies to her friend. Now, she has 20 pennies.

How many pennies did Alice give to her friend?

Algebra:

✓ 41

Hints:

- First, start by drawing the 61 pennies that Alice had at the beginning

Then erase the 20 pennies that she had left

You may want to draw group of ten.

- The number of pennies that Alice gave to her friend is the same as $61 - 20$

$$61 - 20 = 41$$

Type in 41

323) Problem #PRA4KDY "PRA4KDY - Join - start unknown 2"

At the beginning, Jennifer had some marbles. On her birthday, she got 43 more marbles from her mother.

Now, The total number of marbles that she has is 99.

How many marbles did Jennifer have at the beginning?

Algebra:

✓ 56

Hints:

- First draw the 99 marbles,

Then erase 43 marbles that her mother gave to her

You may want to draw group of ten.

- The number of marbles that Jennifer have at the beginning is the same as $99 - 43$

$$99 - 43 = 56$$

Type in 56

324) Problem #PRA4KCP "PRA4KCP - Separate - change unknown 2"

Lona had 98 quarters. She used some quarters to buy a snack. Now, she only has 9 quarters. How many quarters did Lona spend on her snack?

Algebra:

✓ 89

Hints:

- First, start by drawing the 98 quarters that Lona had at the beginning

Then erase the 9 quarters that she had left

You may want to draw group of ten.

- The number of quarters that Lona spent to buy snack is the same as $98 - 9$

$$98 - 9 = 89$$

Type in 89

325) Problem #PRA4KGH "PRA4KGH - Join - change unknown"

Messi had 12 candies and Messi's friend gave him more candies on his birthday. Now he has 53 candies. How many candies did Messi's friend give him?

Algebra:

✓ 41

Hints:

- First draw 53 candies,

Then erase 12 candies that Messi had at the beginning

You may want to draw the group of ten.

- The number of candies that Messi's friend gave him is $53 - 12$

$$53 - 12 = 41$$

Type in 41

326) Problem #PRA4KE9 "PRA4KE9 - Separate - change unknown"

Mejia had 56 pennies. The next day, she gave some pennies to her friend. Now, she has 21 pennies.

How many pennies did Mejia give to her friend?

Algebra:

✓ 35

Hints:

- First, start by drawing the 56 pennies that Mejia had at the beginning

Then erase the 21 pennies that she had left

You may want to draw group of ten.

- The number of pennies that Mejia gave to her friend is the same as $56 - 21$

$$56 - 21 = 35$$

Type in 35

327) Problem #PRA4KGN "PRA4KGN - Join - change unknown"

Potter had 12 candies and Potter's friend gave him more candies on his birthday. Now he has 58 candies. How many candies did Potter's friend give him?

Algebra:

✓ 46

Hints:

- First draw 58 candies,

Then erase 12 candies that Potter had at the beginning

You may want to draw the group of ten.

- The number of candies that Potter's friend gave him is $58 - 12$

$$58 - 12 = 46$$

Type in 46

328) Problem #PRA4KD4 "PRA4KD4 - Join - start unknown 2"

At the beginning, Swift had some rubberbands. On her birthday, she got 27 more rubberbands from her mother.

Now, The total number of rubberbands that she has is 83.

How many rubberbands did Swift have at the beginning?

Algebra:

✓ 56

Hints:

- First draw the 83 rubberbands,

Then erase 27 rubberbands that her mother gave to her

You may want to draw group of ten.

- The number of rubberbands that Swift have at the beginning is the same as $83 - 27$

$$83 - 27 = 56$$

Type in 56

329) Problem #PRA4KCT "PRA4KCT - Separate - change unknown 2"

Adele had 86 nickels. She used some nickels to buy a snack. Now, she only has 32 nickels. How many nickels did Adele spend on her snack?

Algebra:

✓ 54

Hints:

- First, start by drawing the 86 nickels that Adele had at the beginning

Then erase the 32 nickels that she had left

You may want to draw group of ten.

- The number of nickels that Adele spent to buy snack is the same as $86 - 32$

$$86 - 32 = 54$$

Type in 54

330) Problem #PRA4KGS "PRA4KGS - Join - change unknown"

Potter had 22 candies and Potter's friend gave him more candies on his birthday. Now he has 55 candies. How many candies did Potter's friend give him?

Algebra:

✓ 33

Hints:

- First draw 55 candies,

Then erase 22 candies that Potter had at the beginning

You may want to draw the group of ten.

- The number of candies that Potter's friend gave him is $55 - 22$

$$55 - 22 = 33$$

Type in 33

331) Problem #PRA4KFD "PRA4KFD - Separate - change unknown"

Lina had 94 dimes. The next day, she gave some dimes to her friend. Now, she has 49 dimes. How many dimes did Lina give to her friend?

Algebra:

✓ 45

Hints:

- First, start by drawing the 94 dimes that Lina had at the beginning

Then erase the 49 dimes that she had left

You may want to draw group of ten.

- The number of dimes that Lina gave to her friend is the same as $94 - 49$

$$94 - 49 = 45$$

Type in 45

332) Problem #PRA4KCJ "PRA4KCJ - Join - start unknown"

On Monday Alice had some pennies. The next day, her friend gave 34 more pennies to her. Now, she has 95 pennies. How many pennies did Alice have on Monday?

Algebra:

✓ 61

Hints:

- First draw the 95 pennies,

Then erase 34 pennies that her friend gave to her

You may want to draw group of ten.

- The number of pennies that Alice have on Monday is the same as $95 - 34$

$$95 - 34 = 61$$

Type in 61

333) Problem #PRA4KCX "PRA4KCX - Separate - change unknown 2"

Sang had 93 dimes. She used some dimes to buy a snack. Now, she only has 15 dimes. How many dimes did Sang spend on her snack?

Algebra:

✓ 78

Hints:

- First, start by drawing the 93 dimes that Sang had at the beginning

Then erase the 15 dimes that she had left

You may want to draw group of ten.

- The number of dimes that Sang spent to buy snack is the same as $93 - 15$

$$93 - 15 = 78$$

Type in 78

334) Problem #PRA4KHA "PRA4KHA - Join - change unknown"

Cech had 4 candies and Cech's friend gave him more candies on his birthday. Now he has 54 candies. How many candies did Cech's friend give him?

Algebra:

✓ 50

Hints:

- First draw 54 candies,

Then erase 4 candies that Cech had at the beginning

You may want to draw the group of ten.

- The number of candies that Cech's friend gave him is $54 - 4$

$$54 - 4 = 50$$

Type in 50

335) Problem #PRA4KC3 "PRA4KC3 - Separate - change unknown 2"

Miley had 83 pennies. She used some pennies to buy a snack. Now, she only has 19 pennies. How many pennies did Miley spend on her snack?

Algebra:

✓ 64

Hints:

- First, start by drawing the 83 pennies that Miley had at the beginning

Then erase the 19 pennies that she had left

You may want to draw group of ten.

- The number of pennies that Miley spent to buy snack is the same as $83 - 19$

$$83 - 19 = 64$$

Type in 64

336) Problem #PRA4KD8 "PRA4KD8 - Join - start unknown 2"

At the beginning, Jennifer had some marbles. On her birthday, she got 2 more marbles from her mother.

Now, The total number of marbles that she has is 87.

How many marbles did Jennifer have at the beginning?

Algebra:

✓ 85

Hints:

- First draw the 87 marbles,

Then erase 2 marbles that her mother gave to her

You may want to draw group of ten.

- The number of marbles that Jennifer have at the beginning is the same as $87 - 2$

$$87 - 2 = 85$$

Type in 85

337) Problem #PRA4KC7 "PRA4KC7 - Separate - change unknown 2"

Lona had 56 quarters. She used some quarters to buy a snack. Now, she only has 46 quarters. How many quarters did Lona spend on her snack?

Algebra:

✓ 10

Hints:

- First, start by drawing the 56 quarters that Lona had at the beginning

Then erase the 46 quarters that she had left

You may want to draw group of ten.

- The number of quarters that Lona spent to buy snack is the same as $56 - 46$

$$56 - 46 = 10$$

Type in 10

338) Problem #PRA4KEG "PRA4KEG - Join - start unknown 2"

At the beginning, Lona had some clamps. On her birthday, she got 34 more clamps from her mother.

Now, The total number of clamps that she has is 89.

How many clamps did Lona have at the beginning?

Algebra:

✓ 55

Hints:

- First draw the 89 clamps,

Then erase 34 clamps that her mother gave to her

You may want to draw group of ten.

- The number of clamps that Lona have at the beginning is the same as $89 - 34$

$$89 - 34 = 55$$

Type in 55

339) Problem #PRA4KFH "PRA4KFH - Separate - change unknown"

Katherine had 68 nickels. The next day, she gave some nickels to her friend. Now, she has 41 nickels.

How many nickels did Katherine give to her friend?

Algebra:

✓ 27

Hints:

- First, start by drawing the 68 nickels that Katherine had at the beginning

Then erase the 41 nickels that she had left

You may want to draw group of ten.

- The number of nickels that Katherine gave to her friend is the same as $68 - 41$

$$68 - 41 = 27$$

Type in 27

340) Problem #PRA4KER "PRA4KER - Join - start unknown 2"

At the beginning, Lan had some clamps. On her birthday, she got 49 more clamps from her mother.

Now, The total number of clamps that she has is 73.

How many clamps did Lan have at the beginning?

Algebra:

✓ 24

Hints:

- First draw the 73 clamps,

Then erase 49 clamps that her mother gave to her

You may want to draw group of ten.

- The number of clamps that Lan have at the beginning is the same as $73 - 49$

$$73 - 49 = 24$$

Type in 24

341) Problem #PRA4KDB "PRA4KDB - Separate - change unknown 2"

Adele had 58 nickels. She used some nickels to buy a snack. Now, she only has 20 nickels. How many nickels did Adele spend on her snack?

Algebra:

✓ 38

Hints:

- First, start by drawing the 58 nickels that Adele had at the beginning

Then erase the 20 nickels that she had left

You may want to draw group of ten.

- The number of nickels that Adele spent to buy snack is the same as $58 - 20$

$$58 - 20 = 38$$

Type in 38

342) Problem #PRA4KF9 "PRA4KF9 - Separate - change unknown"

Mejia had 91 pennies. The next day, she gave some pennies to her friend. Now, she has 29 pennies.

How many pennies did Mejia give to her friend?

Algebra:

✓ 62

Hints:

- First, start by drawing the 91 pennies that Mejia had at the beginning

Then erase the 29 pennies that she had left

You may want to draw group of ten.

- The number of pennies that Mejia gave to her friend is the same as $91 - 29$

$$91 - 29 = 62$$

Type in 62

343) Problem #PRA4KEC "PRA4KEC - Join - start unknown 2"

At the beginning, Lan had some clamps. On her birthday, she got 20 more clamps from her mother.

Now, The total number of clamps that she has is 90.

How many clamps did Lan have at the beginning?

Algebra:

✓ 70

Hints:

- First draw the 90 clamps,

Then erase 20 clamps that her mother gave to her

You may want to draw group of ten.

- The number of clamps that Lan have at the beginning is the same as $90 - 20$

$$90 - 20 = 70$$

Type in 70

344) Problem #PRA4KDF "PRA4KDF - Separate - change unknown 2"

Lien had 82 pennies. She used some pennies to buy a snack. Now, she only has 13 pennies.

How many pennies did Lien spend on her snack?

Algebra:

✓ 69

Hints:

- First, start by drawing the 82 pennies that Lien had at the beginning

Then erase the 13 pennies that she had left

You may want to draw group of ten.

- The number of pennies that Lien spent to buy snack is the same as $82 - 13$

$$82 - 13 = 69$$

Type in 69

345) Problem #PRA4KGW "PRA4KGW - Join - change unknown"

Messi had 24 candies and Messi's friend gave him more candies on his birthday. Now he has 76 candies. How many candies did Messi's friend give him?

Algebra:

✓ 52

Hints:

- First draw 76 candies,

Then erase 24 candies that Messi had at the beginning

You may want to draw the group of ten.

- The number of candies that Messi's friend gave him is $76 - 24$

$$76 - 24 = 52$$

Type in 52

346) Problem #PRA4KDK "PRA4KDK - Separate - change unknown 2"

Elena had 82 nickels. She used some nickels to buy a snack. Now, she only has 31 nickels. How many nickels did Elena spend on her snack?

Algebra:

✓ 51

Hints:

- First, start by drawing the 82 nickels that Elena had at the beginning

Then erase the 31 nickels that she had left

You may want to draw group of ten.

- The number of nickels that Elena spent to buy snack is the same as $82 - 31$

$$82 - 31 = 51$$

Type in 51

347) Problem #PRA4KFW "PRA4KFW - Separate - change unknown"

Mejia had 63 pennies. The next day, she gave some pennies to her friend. Now, she has 7 pennies.

How many pennies did Mejia give to her friend?

Algebra:

✓ 56

Hints:

- First, start by drawing the 63 pennies that Mejia had at the beginning

Then erase the 7 pennies that she had left

You may want to draw group of ten.

- The number of pennies that Mejia gave to her friend is the same as $63 - 7$

$$63 - 7 = 56$$

Type in 56

348) Problem #PRA4KEV "PRA4KEV - Join - start unknown 2"

At the beginning, Jennifer had some marbles. On her birthday, she got 19 more marbles from her mother.

Now, The total number of marbles that she has is 76.

How many marbles did Jennifer have at the beginning?

Algebra:

✓ 57

Hints:

- First draw the 76 marbles,

Then erase 19 marbles that her mother gave to her

You may want to draw group of ten.

- The number of marbles that Jennifer have at the beginning is the same as $76 - 19$

$$76 - 19 = 57$$

Type in 57

349) Problem #PRA4KGD "PRA4KGD - Separate - change unknown"

Alice had 78 pennies. The next day, she gave some pennies to her friend. Now, she has 49 pennies.

How many pennies did Alice give to her friend?

Algebra:

✓ 29

Hints:

- First, start by drawing the 78 pennies that Alice had at the beginning

Then erase the 49 pennies that she had left

You may want to draw group of ten.

- The number of pennies that Alice gave to her friend is the same as $78 - 49$

$$78 - 49 = 29$$

Type in 29

350) Problem #PRA4KDU "PRA4KDU - Separate - change unknown 2"

Lona had 76 quarters. She used some quarters to buy a snack. Now, she only has 13 quarters. How many quarters did Lona spend on her snack?

Algebra:

✓ 63

Hints:

- First, start by drawing the 76 quarters that Lona had at the beginning

Then erase the 13 quarters that she had left

You may want to draw group of ten.

- The number of quarters that Lona spent to buy snack is the same as $76 - 13$

$$76 - 13 = 63$$

Type in 63

351) Problem #PRA4KEM "PRA4KEM - Join - start unknown 2"

At the beginning, Lona had some clamps. On her birthday, she got 30 more clamps from her mother.

Now, The total number of clamps that she has is 87.

How many clamps did Lona have at the beginning?

Algebra:

✓ 57

Hints:

- First draw the 87 clamps,

Then erase 30 clamps that her mother gave to her

You may want to draw group of ten.

- The number of clamps that Lona have at the beginning is the same as $87 - 30$

$$87 - 30 = 57$$

Type in 57

352) Problem #PRA4KF5 "PRA4KF5 - Separate - change unknown"

Lisa had 74 nickels. The next day, she gave some nickels to her friend. Now, she has 33 nickels. How many nickels did Lisa give to her friend?

Algebra:

✓ 41

Hints:

- First, start by drawing the 74 nickels that Lisa had at the beginning

Then erase the 33 nickels that she had left

You may want to draw group of ten.

- The number of nickels that Lisa gave to her friend is the same as $74 - 33$

$$74 - 33 = 41$$

Type in 41

353) Problem #PRA4KEZ "PRA4KEZ - Join - start unknown 2"

At the beginning, Isabella had some rubberbands. On her birthday, she got 29 more rubberbands from her mother.

Now, The total number of rubberbands that she has is 96.

How many rubberbands did Isabella have at the beginning?

Algebra:

✓ 67

Hints:

- First draw the 96 rubberbands,

Then erase 29 rubberbands that her mother gave to her

You may want to draw group of ten.

- The number of rubberbands that Isabella have at the beginning is the same as $96 - 29$

$$96 - 29 = 67$$

Type in 67

354) Problem #PRA4KFN "PRA4KFN - Separate - change unknown"

Lisa had 81 nickels. The next day, she gave some nickels to her friend. Now, she has 39 nickels. How many nickels did Lisa give to her friend?

Algebra:

✓ 42

Hints:

- First, start by drawing the 81 nickels that Lisa had at the beginning

Then erase the 39 nickels that she had left

You may want to draw group of ten.

- The number of nickels that Lisa gave to her friend is the same as $81 - 39$

$$81 - 39 = 42$$

Type in 42

355) Problem #PRA4KG6 "PRA4KG6 - Join - change unknown"

Ronaldo had 19 candies and Ronaldo's friend gave him more candies on his birthday. Now he has 52 candies. How many candies did Ronaldo's friend give him?

Algebra:

✓ 33

Hints:

- First draw 52 candies,

Then erase 19 candies that Ronaldo had at the beginning

You may want to draw the group of ten.

- The number of candies that Ronaldo's friend gave him is $52 - 19$

$$52 - 19 = 33$$

Type in 33

356) Problem #PRA4KFS "PRA4KFS - Separate - change unknown"

Alice had 58 pennies. The next day, she gave some pennies to her friend. Now, she has 36 pennies.

How many pennies did Alice give to her friend?

Algebra:

✓ 22

Hints:

- First, start by drawing the 58 pennies that Alice had at the beginning

Then erase the 36 pennies that she had left

You may want to draw group of ten.

- The number of pennies that Alice gave to her friend is the same as $58 - 36$

$$58 - 36 = 22$$

Type in 22

357) Problem #PRA4KG2 "PRA4KG2 - Join - change unknown"

Ronaldo had 39 candies and Ronaldo's friend gave him more candies on his birthday. Now he has 62 candies. How many candies did Ronaldo's friend give him?

Algebra:

✓ 23

Hints:

- First draw 62 candies,

Then erase 39 candies that Ronaldo had at the beginning

You may want to draw the group of ten.

- The number of candies that Ronaldo's friend gave him is $62 - 39$

$$62 - 39 = 23$$

Type in 23

358) Problem #PRA4KDQ "PRA4KDQ - Separate - change unknown 2"

Lien had 51 pennies. She used some pennies to buy a snack. Now, she only has 16 pennies. How many pennies did Lien spend on her snack?

Algebra:

✓ 35

Hints:

- First, start by drawing the 51 pennies that Lien had at the beginning

Then erase the 16 pennies that she had left

You may want to draw group of ten.

- The number of pennies that Lien spent to buy snack is the same as $51 - 16$

$$51 - 16 = 35$$

Type in 35

359) Problem #PRA4KCE "PRA4KCE - Join - start unknown"

On Monday Alice had some pennies. The next day, her friend gave 50 more pennies to her. Now, she has 81 pennies. How many pennies did Alice have on Monday?

Algebra:

✓ 31

Hints:

- First draw the 81 pennies,

Then erase 50 pennies that her friend gave to her

You may want to draw group of ten.

- The number of pennies that Alice have on Monday is the same as $81 - 50$

$$81 - 50 = 31$$

Type in 31

360)Duplicate problem: Problem #756118 "PRA4N37 - video" was not displayed.

361)Duplicate problem: Problem #753486 "PRA4KCA - Join - start unknown" was not displayed.

362)Duplicate problem: Problem #753574 "PRA4KE5 - Separate - change unknown" was not displayed.

363)Duplicate problem: Problem #753538 "PRA4KDY - Join - start unknown 2" was not displayed.

364)Duplicate problem: Problem #753498 "PRA4KCP - Separate - change unknown 2" was not displayed.

365)Duplicate problem: Problem #753617 "PRA4KGH - Join - change unknown" was not displayed.

366)Duplicate problem: Problem #753578 "PRA4KE9 - Separate - change unknown" was not displayed.

367)Duplicate problem: Problem #753621 "PRA4KGN - Join - change unknown" was not displayed.

368)Duplicate problem: Problem #753542 "PRA4KD4 - Join - start unknown 2" was not displayed.

369) Duplicate problem: Problem #753502 "PRA4KCT - Separate - change unknown 2" was not displayed.

370) Duplicate problem: Problem #753625 "PRA4KGS - Join - change unknown" was not displayed.

371) Duplicate problem: Problem #753582 "PRA4KFD - Separate - change unknown" was not displayed.

372) Duplicate problem: Problem #753494 "PRA4KCJ - Join - start unknown" was not displayed.

373) Duplicate problem: Problem #753506 "PRA4KCX - Separate - change unknown 2" was not displayed.

374) Duplicate problem: Problem #753641 "PRA4KHA - Join - change unknown" was not displayed.

375) Duplicate problem: Problem #753510 "PRA4KC3 - Separate - change unknown 2" was not displayed.

376) Duplicate problem: Problem #753546 "PRA4KD8 - Join - start unknown 2" was not displayed.

377) Duplicate problem: Problem #753514 "PRA4KC7 - Separate - change unknown 2" was not displayed.

378) Duplicate problem: Problem #753554 "PRA4KEG - Join - start unknown 2" was not displayed.

379) Duplicate problem: Problem #753586 "PRA4KFH - Separate - change unknown" was not displayed.

380) Duplicate problem: Problem #753562 "PRA4KER - Join - start unknown 2" was not displayed.

381) Duplicate problem: Problem #753518 "PRA4KDB - Separate - change unknown 2" was not displayed.

382) Duplicate problem: Problem #753609 "PRA4KF9 - Separate - change unknown" was not displayed.

383) Duplicate problem: Problem #753550 "PRA4KEC - Join - start unknown 2" was not displayed.

384) Duplicate problem: Problem #753522 "PRA4KDF - Separate - change unknown 2" was not displayed.

385) Duplicate problem: Problem #753629 "PRA4KGW - Join - change unknown" was not displayed.

386) Duplicate problem: Problem #753526 "PRA4KDK - Separate - change unknown 2" was not displayed.

387) Duplicate problem: Problem #753598 "PRA4KFW - Separate - change unknown" was not displayed.

388) Duplicate problem: Problem #753566 "PRA4KEV - Join - start unknown 2" was not displayed.

389) Duplicate problem: Problem #753613 "PRA4KGD - Separate - change unknown" was not displayed.

390) Duplicate problem: Problem #753534 "PRA4KDU - Separate - change unknown 2" was not displayed.

displayed.

391) Duplicate problem: Problem #753558 "PRA4KEM - Join - start unknown 2" was not displayed.

392) Duplicate problem: Problem #753605 "PRA4KF5 - Separate - change unknown" was not displayed.

393) Duplicate problem: Problem #753570 "PRA4KEZ - Join - start unknown 2" was not displayed.

394) Duplicate problem: Problem #753590 "PRA4KFN - Separate - change unknown" was not displayed.

395) Duplicate problem: Problem #753637 "PRA4KG6 - Join - change unknown" was not displayed.

396) Duplicate problem: Problem #753594 "PRA4KFS - Separate - change unknown" was not displayed.

397) Duplicate problem: Problem #753633 "PRA4KG2 - Join - change unknown" was not displayed.

398) Duplicate problem: Problem #753530 "PRA4KDQ - Separate - change unknown 2" was not displayed.

399) Duplicate problem: Problem #753490 "PRA4KCE - Join - start unknown" was not displayed.

400) Problem #PRA4KB7 "PRA4KB7 - Join - start unknown 2"

At the beginning, Isabella had some rubberbands. On her birthday, she got 39 more rubberbands from her mother.

Now, The total number of rubberbands that she has is 65.

How many rubberbands did Isabella have at the beginning?

Algebra:

✓ 26

Hints:

- First draw the 65 rubberbands,

Then erase 39 rubberbands that her mother gave to her

You may want to draw group of ten.

- The number of rubberbands that Isabella have at the beginning is the same as $65 - 39$

$$65 - 39 = 26$$

Type in 26

401) Problem #PRA4KCB "PRA4KCB - Join - start unknown"

On Monday Lisa had some nickels. The next day, her friend gave 31 more nickels to her. Now, she has 75 nickels. How many nickels did Lisa have on Monday?

Algebra:

✓ 44

Hints:

- First draw the 75 nickels,

Then erase 31 nickels that her friend gave to her

You may want to draw group of ten.

- The number of nickels that Lisa have on Monday is the same as $75 - 31$

$$75 - 31 = 44$$

Type in 44

402) Problem #PRA4KE6 "PRA4KE6 - Separate - change unknown"

Alice had 61 pennies. The next day, she gave some pennies to her friend. Now, she has 20 pennies.

How many pennies did Alice give to her friend?

Algebra:

✓ 41

Hints:

- First, start by drawing the 61 pennies that Alice had at the beginning

Then erase the 20 pennies that she had left

You may want to draw group of ten.

- The number of pennies that Alice gave to her friend is the same as $61 - 20$

$$61 - 20 = 41$$

Type in 41

403) Problem #PRA4KDZ "PRA4KDZ - Join - start unknown 2"

At the beginning, Jennifer had some marbles. On her birthday, she got 43 more marbles from her mother.

Now, The total number of marbles that she has is 99.

How many marbles did Jennifer have at the beginning?

Algebra:

✓ 56

Hints:

- First draw the 99 marbles,

Then erase 43 marbles that her mother gave to her

You may want to draw group of ten.

- The number of marbles that Jennifer have at the beginning is the same as $99 - 43$

$$99 - 43 = 56$$

Type in 56

404) Problem #PRA4KCQ "PRA4KCQ - Separate - change unknown 2"

Lona had 98 quarters. She used some quarters to buy a snack. Now, she only has 9 quarters. How many quarters did Lona spend on her snack?

Algebra:

✓ 89

Hints:

- First, start by drawing the 98 quarters that Lona had at the beginning

Then erase the 9 quarters that she had left

You may want to draw group of ten.

- The number of quarters that Lona spent to buy snack is the same as $98 - 9$

$$98 - 9 = 89$$

Type in 89

405) Problem #PRA4KGJ "PRA4KGJ - Join - change unknown"

Messi had 12 candies and Messi's friend gave him more candies on his birthday. Now he has 53 candies. How many candies did Messi's friend give him?

Algebra:

✓ 41

Hints:

- First draw 53 candies,

Then erase 12 candies that Messi had at the beginning

You may want to draw the group of ten.

- The number of candies that Messi's friend gave him is $53 - 12$

$$53 - 12 = 41$$

Type in 41

406) Problem #PRA4KFA "PRA4KFA - Separate - change unknown"

Mejia had 56 pennies. The next day, she gave some pennies to her friend. Now, she has 21 pennies.

How many pennies did Mejia give to her friend?

Algebra:

✓ 35

Hints:

- First, start by drawing the 56 pennies that Mejia had at the beginning

Then erase the 21 pennies that she had left

You may want to draw group of ten.

- The number of pennies that Mejia gave to her friend is the same as $56 - 21$

$$56 - 21 = 35$$

Type in 35

407) Problem #PRA4KGP "PRA4KGP - Join - change unknown"

Potter had 12 candies and Potter's friend gave him more candies on his birthday. Now he has 58 candies. How many candies did Potter's friend give him?

Algebra:

✓ 46

Hints:

- First draw 58 candies,

Then erase 12 candies that Potter had at the beginning

You may want to draw the group of ten.

- The number of candies that Potter's friend gave him is $58 - 12$

$$58 - 12 = 46$$

Type in 46

408) Problem #PRA4KD5 "PRA4KD5 - Join - start unknown 2"

At the beginning, Swift had some rubberbands. On her birthday, she got 27 more rubberbands from her mother.

Now, The total number of rubberbands that she has is 83.

How many rubberbands did Swift have at the beginning?

Algebra:

✓ 56

Hints:

- First draw the 83 rubberbands,

Then erase 27 rubberbands that her mother gave to her

You may want to draw group of ten.

- The number of rubberbands that Swift have at the beginning is the same as $83 - 27$

$$83 - 27 = 56$$

Type in 56

409) Problem #PRA4KCU "PRA4KCU - Separate - change unknown 2"

Adele had 86 nickels. She used some nickels to buy a snack. Now, she only has 32 nickels.

How many nickels did Adele spend on her snack?

Algebra:

✓ 54

Hints:

- First, start by drawing the 86 nickels that Adele had at the beginning

Then erase the 32 nickels that she had left

You may want to draw group of ten.

- The number of nickels that Adele spent to buy snack is the same as $86 - 32$

$$86 - 32 = 54$$

Type in 54

410) Problem #PRA4KGT "PRA4KGT - Join - change unknown"

Potter had 22 candies and Potter's friend gave him more candies on his birthday. Now he has 55 candies. How many candies did Potter's friend give him?

Algebra:

✓ 33

Hints:

- First draw 55 candies,

Then erase 22 candies that Potter had at the beginning

You may want to draw the group of ten.

- The number of candies that Potter's friend gave him is $55 - 22$

$$55 - 22 = 33$$

Type in 33

411) Problem #PRA4KFE "PRA4KFE - Separate - change unknown"

Lina had 94 dimes. The next day, she gave some dimes to her friend. Now, she has 49 dimes. How many dimes did Lina give to her friend?

Algebra:

✓ 45

Hints:

- First, start by drawing the 94 dimes that Lina had at the beginning

Then erase the 49 dimes that she had left

You may want to draw group of ten.

- The number of dimes that Lina gave to her friend is the same as $94 - 49$

$$94 - 49 = 45$$

Type in 45

412) Problem #PRA4KCK "PRA4KCK - Join - start unknown"

On Monday Alice had some pennies. The next day, her friend gave 34 more pennies to her. Now, she has 95 pennies. How many pennies did Alice have on Monday?

Algebra:

✓ 61

Hints:

- First draw the 95 pennies,

Then erase 34 pennies that her friend gave to her

You may want to draw group of ten.

- The number of pennies that Alice have on Monday is the same as $95 - 34$

$$95 - 34 = 61$$

Type in 61

413) Problem #PRA4KCY "PRA4KCY - Separate - change unknown 2"

Sang had 93 dimes. She used some dimes to buy a snack. Now, she only has 15 dimes. How many dimes did Sang spend on her snack?

Algebra:

✓ 78

Hints:

- First, start by drawing the 93 dimes that Sang had at the beginning

Then erase the 15 dimes that she had left

You may want to draw group of ten.

- The number of dimes that Sang spent to buy snack is the same as $93 - 15$

$$93 - 15 = 78$$

Type in 78

414) Problem #PRA4KHB "PRA4KHB - Join - change unknown"

Cech had 4 candies and Cech's friend gave him more candies on his birthday. Now he has 54 candies. How many candies did Cech's friend give him?

Algebra:

✓ 50

Hints:

- First draw 54 candies,

Then erase 4 candies that Cech had at the beginning

You may want to draw the group of ten.

- The number of candies that Cech's friend gave him is $54 - 4$

$$54 - 4 = 50$$

Type in 50

415) Problem #PRA4KC4 "PRA4KC4 - Separate - change unknown 2"

Miley had 83 pennies. She used some pennies to buy a snack. Now, she only has 19 pennies. How many pennies did Miley spend on her snack?

Algebra:

✓ 64

Hints:

- First, start by drawing the 83 pennies that Miley had at the beginning

Then erase the 19 pennies that she had left

You may want to draw group of ten.

- The number of pennies that Miley spent to buy snack is the same as $83 - 19$

$$83 - 19 = 64$$

Type in 64

416) Problem #PRA4KD9 "PRA4KD9 - Join - start unknown 2"

At the beginning, Jennifer had some marbles. On her birthday, she got 2 more marbles from her mother.

Now, The total number of marbles that she has is 87.

How many marbles did Jennifer have at the beginning?

Algebra:

✓ 85

Hints:

- First draw the 87 marbles,

Then erase 2 marbles that her mother gave to her

You may want to draw group of ten.

- The number of marbles that Jennifer have at the beginning is the same as $87 - 2$

$$87 - 2 = 85$$

Type in 85

417) Problem #PRA4KC8 "PRA4KC8 - Separate - change unknown 2"

Lona had 56 quarters. She used some quarters to buy a snack. Now, she only has 46 quarters. How many quarters did Lona spend on her snack?

Algebra:

✓ 10

Hints:

- First, start by drawing the 56 quarters that Lona had at the beginning

Then erase the 46 quarters that she had left

You may want to draw group of ten.

- The number of quarters that Lona spent to buy snack is the same as $56 - 46$

$$56 - 46 = 10$$

Type in 10

418) Problem #PRA4KEH "PRA4KEH - Join - start unknown 2"

At the beginning, Lona had some clamps. On her birthday, she got 34 more clamps from her mother.

Now, The total number of clamps that she has is 89.

How many clamps did Lona have at the beginning?

Algebra:

✓ 55

Hints:

- First draw the 89 clamps,

Then erase 34 clamps that her mother gave to her

You may want to draw group of ten.

- The number of clamps that Lona have at the beginning is the same as $89 - 34$

$$89 - 34 = 55$$

Type in 55

419) Problem #PRA4KFJ "PRA4KFJ - Separate - change unknown"

Katherine had 68 nickels. The next day, she gave some nickels to her friend. Now, she has 41 nickels.

How many nickels did Katherine give to her friend?

Algebra:

✓ 27

Hints:

- First, start by drawing the 68 nickels that Katherine had at the beginning

Then erase the 41 nickels that she had left

You may want to draw group of ten.

- The number of nickels that Katherine gave to her friend is the same as $68 - 41$

$$68 - 41 = 27$$

Type in 27

420) Problem #PRA4KES "PRA4KES - Join - start unknown 2"

At the beginning, Lan had some clamps. On her birthday, she got 49 more clamps from her mother.

Now, The total number of clamps that she has is 73.

How many clamps did Lan have at the beginning?

Algebra:

✓ 24

Hints:

- First draw the 73 clamps,

Then erase 49 clamps that her mother gave to her

You may want to draw group of ten.

- The number of clamps that Lan have at the beginning is the same as $73 - 49$

$$73 - 49 = 24$$

Type in 24

421) Problem #PRA4KDC "PRA4KDC - Separate - change unknown 2"

Adele had 58 nickels. She used some nickels to buy a snack. Now, she only has 20 nickels.

How many nickels did Adele spend on her snack?

Algebra:

✓ 38

Hints:

- First, start by drawing the 58 nickels that Adele had at the beginning

Then erase the 20 nickels that she had left

You may want to draw group of ten.

- The number of nickels that Adele spent to buy snack is the same as $58 - 20$

$$58 - 20 = 38$$

Type in 38

422) Problem #PRA4KGA "PRA4KGA - Separate - change unknown"

Mejia had 91 pennies. The next day, she gave some pennies to her friend. Now, she has 29 pennies.

How many pennies did Mejia give to her friend?

Algebra:

✓ 62

Hints:

- First, start by drawing the 91 pennies that Mejia had at the beginning

Then erase the 29 pennies that she had left

You may want to draw group of ten.

- The number of pennies that Mejia gave to her friend is the same as $91 - 29$

$$91 - 29 = 62$$

Type in 62

423) Problem #PRA4KED "PRA4KED - Join - start unknown 2"

At the beginning, Lan had some clamps. On her birthday, she got 20 more clamps from her mother.

Now, The total number of clamps that she has is 90.

How many clamps did Lan have at the beginning?

Algebra:

✓ 70

Hints:

- First draw the 90 clamps,

Then erase 20 clamps that her mother gave to her

You may want to draw group of ten.

- The number of clamps that Lan have at the beginning is the same as $90 - 20$

$$90 - 20 = 70$$

Type in 70

424) Problem #PRA4KDG "PRA4KDG - Separate - change unknown 2"

Lien had 82 pennies. She used some pennies to buy a snack. Now, she only has 13 pennies. How many pennies did Lien spend on her snack?

Algebra:

✓ 69

Hints:

- First, start by drawing the 82 pennies that Lien had at the beginning

Then erase the 13 pennies that she had left

You may want to draw group of ten.

- The number of pennies that Lien spent to buy snack is the same as $82 - 13$

$$82 - 13 = 69$$

Type in 69

425) Problem #PRA4KGX "PRA4KGX - Join - change unknown"

Messi had 24 candies and Messi's friend gave him more candies on his birthday. Now he has 76 candies. How many candies did Messi's friend give him?

Algebra:

✓ 52

Hints:

- First draw 76 candies,

Then erase 24 candies that Messi had at the beginning

You may want to draw the group of ten.

- The number of candies that Messi's friend gave him is $76 - 24$

$$76 - 24 = 52$$

Type in 52

426) Problem #PRA4KDM "PRA4KDM - Separate - change unknown 2"

Elena had 82 nickels. She used some nickels to buy a snack. Now, she only has 31 nickels. How many nickels did Elena spend on her snack?

Algebra:

✓ 51

Hints:

- First, start by drawing the 82 nickels that Elena had at the beginning

Then erase the 31 nickels that she had left

You may want to draw group of ten.

- The number of nickels that Elena spent to buy snack is the same as $82 - 31$

$$82 - 31 = 51$$

Type in 51

427) Problem #PRA4KFX "PRA4KFX - Separate - change unknown"

Mejia had 63 pennies. The next day, she gave some pennies to her friend. Now, she has 7 pennies.

How many pennies did Mejia give to her friend?

Algebra:

✓ 56

Hints:

- First, start by drawing the 63 pennies that Mejia had at the beginning

Then erase the 7 pennies that she had left

You may want to draw group of ten.

- The number of pennies that Mejia gave to her friend is the same as $63 - 7$

$$63 - 7 = 56$$

Type in 56

428) Problem #PRA4KEW "PRA4KEW - Join - start unknown 2"

At the beginning, Jennifer had some marbles. On her birthday, she got 19 more marbles from her mother.

Now, The total number of marbles that she has is 76.

How many marbles did Jennifer have at the beginning?

Algebra:

✓ 57

Hints:

- First draw the 76 marbles,

Then erase 19 marbles that her mother gave to her

You may want to draw group of ten.

- The number of marbles that Jennifer have at the beginning is the same as $76 - 19$

$$76 - 19 = 57$$

Type in 57

429) Problem #PRA4KGE "PRA4KGE - Separate - change unknown"

Alice had 78 pennies. The next day, she gave some pennies to her friend. Now, she has 49 pennies.

How many pennies did Alice give to her friend?

Algebra:

✓ 29

Hints:

- First, start by drawing the 78 pennies that Alice had at the beginning

Then erase the 49 pennies that she had left

You may want to draw group of ten.

- The number of pennies that Alice gave to her friend is the same as $78 - 49$

$$78 - 49 = 29$$

Type in 29

430) Problem #PRA4KDV "PRA4KDV - Separate - change unknown 2"

Lona had 76 quarters. She used some quarters to buy a snack. Now, she only has 13 quarters. How many quarters did Lona spend on her snack?

Algebra:

✓ 63

Hints:

- First, start by drawing the 76 quarters that Lona had at the beginning

Then erase the 13 quarters that she had left

You may want to draw group of ten.

- The number of quarters that Lona spent to buy snack is the same as $76 - 13$

$$76 - 13 = 63$$

Type in 63

431) Problem #PRA4KEN "PRA4KEN - Join - start unknown 2"

At the beginning, Lona had some clamps. On her birthday, she got 30 more clamps from her mother.

Now, The total number of clamps that she has is 87.

How many clamps did Lona have at the beginning?

Algebra:

✓ 57

Hints:

- First draw the 87 clamps,

Then erase 30 clamps that her mother gave to her

You may want to draw group of ten.

- The number of clamps that Lona have at the beginning is the same as $87 - 30$

$$87 - 30 = 57$$

Type in 57

432) Problem #PRA4KF6 "PRA4KF6 - Separate - change unknown"

Lisa had 74 nickels. The next day, she gave some nickels to her friend. Now, she has 33 nickels. How many nickels did Lisa give to her friend?

Algebra:

✓ 41

Hints:

- First, start by drawing the 74 nickels that Lisa had at the beginning

Then erase the 33 nickels that she had left

You may want to draw group of ten.

- The number of nickels that Lisa gave to her friend is the same as $74 - 33$

$$74 - 33 = 41$$

Type in 41

433) Problem #PRA4KE2 "PRA4KE2 - Join - start unknown 2"

At the beginning, Isabella had some rubberbands. On her birthday, she got 29 more rubberbands from her mother.

Now, The total number of rubberbands that she has is 96.

How many rubberbands did Isabella have at the beginning?

Algebra:

✓ 67

Hints:

- First draw the 96 rubberbands,

Then erase 29 rubberbands that her mother gave to her

You may want to draw group of ten.

- The number of rubberbands that Isabella have at the beginning is the same as $96 - 29$

$$96 - 29 = 67$$

Type in 67

434) Problem #PRA4KFP "PRA4KFP - Separate - change unknown"

Lisa had 81 nickels. The next day, she gave some nickels to her friend. Now, she has 39 nickels. How many nickels did Lisa give to her friend?

Algebra:

✓ 42

Hints:

- First, start by drawing the 81 nickels that Lisa had at the beginning

Then erase the 39 nickels that she had left

You may want to draw group of ten.

- The number of nickels that Lisa gave to her friend is the same as $81 - 39$

$$81 - 39 = 42$$

Type in 42

435) Problem #PRA4KG7 "PRA4KG7 - Join - change unknown"

Ronaldo had 19 candies and Ronaldo's friend gave him more candies on his birthday. Now he has 52 candies. How many candies did Ronaldo's friend give him?

Algebra:

✓ 33

Hints:

- First draw 52 candies,

Then erase 19 candies that Ronaldo had at the beginning

You may want to draw the group of ten.

- The number of candies that Ronaldo's friend gave him is $52 - 19$

$$52 - 19 = 33$$

Type in 33

436) Problem #PRA4KFT "PRA4KFT - Separate - change unknown"

Alice had 58 pennies. The next day, she gave some pennies to her friend. Now, she has 36 pennies.

How many pennies did Alice give to her friend?

Algebra:

✓ 22

Hints:

- First, start by drawing the 58 pennies that Alice had at the beginning

Then erase the 36 pennies that she had left

You may want to draw group of ten.

- The number of pennies that Alice gave to her friend is the same as $58 - 36$

$$58 - 36 = 22$$

Type in 22

437) Problem #PRA4KG3 "PRA4KG3 - Join - change unknown"

Ronaldo had 39 candies and Ronaldo's friend gave him more candies on his birthday. Now he has 62 candies. How many candies did Ronaldo's friend give him?

Algebra:

✓ 23

Hints:

- First draw 62 candies,

Then erase 39 candies that Ronaldo had at the beginning

You may want to draw the group of ten.

- The number of candies that Ronaldo's friend gave him is $62 - 39$

$$62 - 39 = 23$$

Type in 23

438) Problem #PRA4KDR "PRA4KDR - Separate - change unknown 2"

Lien had 51 pennies. She used some pennies to buy a snack. Now, she only has 16 pennies. How many pennies did Lien spend on her snack?

Algebra:

✓ 35

Hints:

- First, start by drawing the 51 pennies that Lien had at the beginning

Then erase the 16 pennies that she had left

You may want to draw group of ten.

- The number of pennies that Lien spent to buy snack is the same as $51 - 16$

$$51 - 16 = 35$$

Type in 35

439) Problem #PRA4KCF "PRA4KCF - Join - start unknown"

On Monday Alice had some pennies. The next day, her friend gave 50 more pennies to her. Now, she has 81 pennies. How many pennies did Alice have on Monday?

Algebra:

✓ 31

Hints:

- First draw the 81 pennies,

Then erase 50 pennies that her friend gave to her

You may want to draw group of ten.

- The number of pennies that Alice have on Monday is the same as $81 - 50$

$$81 - 50 = 31$$

Type in 31

440) Problem #PRA4NN7 "PRA4NN7 - Join - start unknown 2"

At the beginning, Isabella had some rubberbands. On her birthday, she got 39 more rubberbands from her mother.

Now, The total number of rubberbands that she has is 65.

How many rubberbands did Isabella have at the beginning?

Algebra:

✓ 26

Hints:

- First draw the 65 rubberbands,

Then erase 39 rubberbands that her mother gave to her

You may want to draw group of ten.

- The number of rubberbands that Isabella have at the beginning is the same as $65 - 39$

$$65 - 39 = 26$$

Type in 26

441) Problem #PRA4NN8 "PRA4NN8 - Join - start unknown"

On Monday Lisa had some nickels. The next day, her friend gave 31 more nickels to her. Now, she has 75 nickels. How many nickels did Lisa have on Monday?

Algebra:

✓ 44

Hints:

- First draw the 75 nickels,

Then erase 31 nickels that her friend gave to her

You may want to draw group of ten.

- The number of nickels that Lisa have on Monday is the same as $75 - 31$

$$75 - 31 = 44$$

Type in 44

442) Problem #PRA4NQK "PRA4NQK - Separate - change unknown"

Alice had 61 pennies. The next day, she gave some pennies to her friend. Now, she has 20 pennies.

How many pennies did Alice give to her friend?

Algebra:

✓ 41

Hints:

- First, start by drawing the 61 pennies that Alice had at the beginning

Then erase the 20 pennies that she had left

You may want to draw group of ten.

- The number of pennies that Alice gave to her friend is the same as $61 - 20$

$$61 - 20 = 41$$

Type in 41

443) Problem #PRA4NQM "PRA4NQM - Join - start unknown 2"

At the beginning, Jennifer had some marbles. On her birthday, she got 43 more marbles from her mother.

Now, The total number of marbles that she has is 99.

How many marbles did Jennifer have at the beginning?

Algebra:

✓ 56

Hints:

- First draw the 99 marbles,

Then erase 43 marbles that her mother gave to her

You may want to draw group of ten.

- The number of marbles that Jennifer have at the beginning is the same as $99 - 43$

$$99 - 43 = 56$$

Type in 56

444) Problem #PRA4NPB "PRA4NPB - Separate - change unknown 2"

Lona had 98 quarters. She used some quarters to buy a snack. Now, she only has 9 quarters.

How many quarters did Lona spend on her snack?

Algebra:

✓ 89

Hints:

- First, start by drawing the 98 quarters that Lona had at the beginning

Then erase the 9 quarters that she had left

You may want to draw group of ten.

- The number of quarters that Lona spent to buy snack is the same as $98 - 9$

$$98 - 9 = 89$$

Type in 89

445) Problem #PRA4NPF "PRA4NPF - Join - change unknown"

Messi had 12 candies and Messi's friend gave him more candies on his birthday. Now he has 53 candies. How many candies did Messi's friend give him?

Algebra:

✓ 41

Hints:

- First draw 53 candies,

Then erase 12 candies that Messi had at the beginning

You may want to draw the group of ten.

- The number of candies that Messi's friend gave him is $53 - 12$

$$53 - 12 = 41$$

Type in 41

446) Problem #PRA4NPG "PRA4NPG - Separate - change unknown"

Mejia had 56 pennies. The next day, she gave some pennies to her friend. Now, she has 21 pennies.

How many pennies did Mejia give to her friend?

Algebra:

✓ 35

Hints:

- First, start by drawing the 56 pennies that Mejia had at the beginning

Then erase the 21 pennies that she had left

You may want to draw group of ten.

- The number of pennies that Mejia gave to her friend is the same as $56 - 21$

$$56 - 21 = 35$$

Type in 35

447) Problem #PRA4NPH "PRA4NPH - Join - change unknown"

Potter had 12 candies and Potter's friend gave him more candies on his birthday. Now he has 58 candies. How many candies did Potter's friend give him?

Algebra:

✓ 46

Hints:

- First draw 58 candies,

Then erase 12 candies that Potter had at the beginning

You may want to draw the group of ten.

- The number of candies that Potter's friend gave him is $58 - 12$

$$58 - 12 = 46$$

Type in 46

448) Problem #PRA4NPJ "PRA4NPJ - Join - start unknown 2"

At the beginning, Swift had some rubberbands. On her birthday, she got 27 more rubberbands from her mother.

Now, The total number of rubberbands that she has is 83.

How many rubberbands did Swift have at the beginning?

Algebra:

✓ 56

Hints:

- First draw the 83 rubberbands,

Then erase 27 rubberbands that her mother gave to her

You may want to draw group of ten.

- The number of rubberbands that Swift have at the beginning is the same as $83 - 27$

$$83 - 27 = 56$$

Type in 56

449) Problem #PRA4NPK "PRA4NPK - Separate - change unknown 2"

Adele had 86 nickels. She used some nickels to buy a snack. Now, she only has 32 nickels. How many nickels did Adele spend on her snack?

Algebra:

✓ 54

Hints:

- First, start by drawing the 86 nickels that Adele had at the beginning

Then erase the 32 nickels that she had left

You may want to draw group of ten.

- The number of nickels that Adele spent to buy snack is the same as $86 - 32$

$$86 - 32 = 54$$

Type in 54

450) Problem #PRA4NPM "PRA4NPM - Join - change unknown"

Potter had 22 candies and Potter's friend gave him more candies on his birthday. Now he has 55 candies. How many candies did Potter's friend give him?

Algebra:

✓ 33

Hints:

- First draw 55 candies,

Then erase 22 candies that Potter had at the beginning

You may want to draw the group of ten.

- The number of candies that Potter's friend gave him is $55 - 22$

$$55 - 22 = 33$$

Type in 33

451) Problem #PRA4NPN "PRA4NPN - Separate - change unknown"

Lina had 94 dimes. The next day, she gave some dimes to her friend. Now, she has 49 dimes.

How many dimes did Lina give to her friend?

Algebra:

✓ 45

Hints:

- First, start by drawing the 94 dimes that Lina had at the beginning

Then erase the 49 dimes that she had left

You may want to draw group of ten.

- The number of dimes that Lina gave to her friend is the same as $94 - 49$

$$94 - 49 = 45$$

Type in 45

452) Problem #PRA4NPP "PRA4NPP - Join - start unknown"

On Monday Alice had some pennies. The next day, her friend gave 34 more pennies to her. Now, she has 95 pennies. How many pennies did Alice have on Monday?

Algebra:

✓ 61

Hints:

- First draw the 95 pennies,

Then erase 34 pennies that her friend gave to her

You may want to draw group of ten.

- The number of pennies that Alice have on Monday is the same as $95 - 34$

$$95 - 34 = 61$$

Type in 61

453) Problem #PRA4NPQ "PRA4NPQ - Separate - change unknown 2"

Sang had 93 dimes. She used some dimes to buy a snack. Now, she only has 15 dimes. How many dimes did Sang spend on her snack?

Algebra:

✓ 78

Hints:

- First, start by drawing the 93 dimes that Sang had at the beginning

Then erase the 15 dimes that she had left

You may want to draw group of ten.

- The number of dimes that Sang spent to buy snack is the same as $93 - 15$

$$93 - 15 = 78$$

Type in 78

454) Problem #PRA4NPR "PRA4NPR - Join - change unknown"

Cech had 4 candies and Cech's friend gave him more candies on his birthday. Now he has 54 candies. How many candies did Cech's friend give him?

Algebra:

✓ 50

Hints:

- First draw 54 candies,

Then erase 4 candies that Cech had at the beginning

You may want to draw the group of ten.

- The number of candies that Cech's friend gave him is $54 - 4$

$$54 - 4 = 50$$

Type in 50

455) Problem #PRA4NPS "PRA4NPS - Separate - change unknown 2"

Miley had 83 pennies. She used some pennies to buy a snack. Now, she only has 19 pennies. How many pennies did Miley spend on her snack?

Algebra:

✓ 64

Hints:

- First, start by drawing the 83 pennies that Miley had at the beginning

Then erase the 19 pennies that she had left

You may want to draw group of ten.

- The number of pennies that Miley spent to buy snack is the same as $83 - 19$

$$83 - 19 = 64$$

Type in 64

456) Problem #PRA4NPT "PRA4NPT - Join - start unknown 2"

At the beginning, Jennifer had some marbles. On her birthday, she got 2 more marbles from her mother.

Now, The total number of marbles that she has is 87.

How many marbles did Jennifer have at the beginning?

Algebra:

✓ 85

Hints:

- First draw the 87 marbles,

Then erase 2 marbles that her mother gave to her

You may want to draw group of ten.

- The number of marbles that Jennifer have at the beginning is the same as $87 - 2$

$$87 - 2 = 85$$

Type in 85

457) Problem #PRA4NPU "PRA4NPU - Separate - change unknown 2"

Lona had 56 quarters. She used some quarters to buy a snack. Now, she only has 46 quarters.

How many quarters did Lona spend on her snack?

Algebra:

✓ 10

Hints:

- First, start by drawing the 56 quarters that Lona had at the beginning

Then erase the 46 quarters that she had left

You may want to draw group of ten.

- The number of quarters that Lona spent to buy snack is the same as $56 - 46$

$$56 - 46 = 10$$

Type in 10

458) Problem #PRA4NPV "PRA4NPV - Join - start unknown 2"

At the beginning,Lona had some clamps. On her birthday, she got 34 more clamps from her mother.

Now, The total number of clamps that she has is 89.

How many clamps did Lona have at the beginning?

Algebra:

✓ 55

Hints:

- First draw the 89 clamps,

Then erase 34 clamps that her mother gave to her

You may want to draw group of ten.

- The number of clamps that Lona have at the beginning is the same as $89 - 34$

$$89 - 34 = 55$$

Type in 55

459) Problem #PRA4NPW "PRA4NPW - Separate - change unknown"

Katherine had 68 nickels. The next day, she gave some nickels to her friend. Now, she has 41 nickels.

How many nickels did Katherine give to her friend?

Algebra:

✓ 27

Hints:

- First, start by drawing the 68 nickels that Katherine had at the beginning

Then erase the 41 nickels that she had left

You may want to draw group of ten.

- The number of nickels that Katherine gave to her friend is the same as $68 - 41$

$$68 - 41 = 27$$

Type in 27

460) Problem #PRA4NPX "PRA4NPX - Join - start unknown 2"

At the beginning,Lan had some clamps. On her birthday, she got 49 more clamps from her mother.

Now, The total number of clamps that she has is 73.

How many clamps did Lan have at the beginning?

Algebra:

✓ 24

Hints:

- First draw the 73 clamps,

Then erase 49 clamps that her mother gave to her

You may want to draw group of ten.

- The number of clamps that Lan have at the beginning is the same as $73 - 49$

$$73 - 49 = 24$$

Type in 24

461) Problem #PRA4NPY "PRA4NPY - Separate - change unknown 2"

Adele had 58 nickels. She used some nickels to buy a snack. Now, she only has 20 nickels. How many nickels did Adele spend on her snack?

Algebra:

✓ 38

Hints:

- First, start by drawing the 58 nickels that Adele had at the beginning

Then erase the 20 nickels that she had left

You may want to draw group of ten.

- The number of nickels that Adele spent to buy snack is the same as $58 - 20$

$$58 - 20 = 38$$

Type in 38

462) Problem #PRA4NPZ "PRA4NPZ - Separate - change unknown"

Mejia had 91 pennies. The next day, she gave some pennies to her friend. Now, she has 29 pennies.

How many pennies did Mejia give to her friend?

Algebra:

✓ 62

Hints:

- First, start by drawing the 91 pennies that Mejia had at the beginning

Then erase the 29 pennies that she had left

You may want to draw group of ten.

- The number of pennies that Mejia gave to her friend is the same as $91 - 29$

$$91 - 29 = 62$$

Type in 62

463) Problem #PRA4NP2 "PRA4NP2 - Join - start unknown 2"

At the beginning, Lan had some clamps. On her birthday, she got 20 more clamps from her mother.

Now, The total number of clamps that she has is 90.

How many clamps did Lan have at the beginning?

Algebra:

✓ 70

Hints:

- First draw the 90 clamps,

Then erase 20 clamps that her mother gave to her

You may want to draw group of ten.

- The number of clamps that Lan have at the beginning is the same as $90 - 20$

$$90 - 20 = 70$$

Type in 70

464) Problem #PRA4NP3 "PRA4NP3 - Separate - change unknown 2"

Lien had 82 pennies. She used some pennies to buy a snack. Now, she only has 13 pennies.

How many pennies did Lien spend on her snack?

Algebra:

✓ 69

Hints:

- First, start by drawing the 82 pennies that Lien had at the beginning

Then erase the 13 pennies that she had left

You may want to draw group of ten.

- The number of pennies that Lien spent to buy snack is the same as $82 - 13$

$$82 - 13 = 69$$

Type in 69

465) Problem #PRA4NP4 "PRA4NP4 - Join - change unknown"

Messi had 24 candies and Messi's friend gave him more candies on his birthday. Now he has 76 candies. How many candies did Messi's friend give him?

Algebra:

✓ 52

Hints:

- First draw 76 candies,

Then erase 24 candies that Messi had at the beginning

You may want to draw the group of ten.

- The number of candies that Messi's friend gave him is $76 - 24$

$$76 - 24 = 52$$

Type in 52

466) Problem #PRA4NP5 "PRA4NP5 - Separate - change unknown 2"

Elena had 82 nickels. She used some nickels to buy a snack. Now, she only has 31 nickels. How many nickels did Elena spend on her snack?

Algebra:

✓ 51

Hints:

- First, start by drawing the 82 nickels that Elena had at the beginning

Then erase the 31 nickels that she had left

You may want to draw group of ten.

- The number of nickels that Elena spent to buy snack is the same as $82 - 31$

$$82 - 31 = 51$$

Type in 51

467) Problem #PRA4NP6 "PRA4NP6 - Separate - change unknown"

Mejia had 63 pennies. The next day, she gave some pennies to her friend. Now, she has 7 pennies.

How many pennies did Mejia give to her friend?

Algebra:

✓ 56

Hints:

- First, start by drawing the 63 pennies that Mejia had at the beginning

Then erase the 7 pennies that she had left

You may want to draw group of ten.

- The number of pennies that Mejia gave to her friend is the same as $63 - 7$

$$63 - 7 = 56$$

Type in 56

468) Problem #PRA4NP7 "PRA4NP7 - Join - start unknown 2"

At the beginning, Jennifer had some marbles. On her birthday, she got 19 more marbles from her mother.

Now, The total number of marbles that she has is 76.

How many marbles did Jennifer have at the beginning?

Algebra:

✓ 57

Hints:

- First draw the 76 marbles,

Then erase 19 marbles that her mother gave to her

You may want to draw group of ten.

- The number of marbles that Jennifer have at the beginning is the same as $76 - 19$

$$76 - 19 = 57$$

Type in 57

469) Problem #PRA4NP8 "PRA4NP8 - Separate - change unknown"

Alice had 78 pennies. The next day, she gave some pennies to her friend. Now, she has 49 pennies.

How many pennies did Alice give to her friend?

Algebra:

✓ 29

Hints:

- First, start by drawing the 78 pennies that Alice had at the beginning

Then erase the 49 pennies that she had left

You may want to draw group of ten.

- The number of pennies that Alice gave to her friend is the same as $78 - 49$

$$78 - 49 = 29$$

Type in 29

470) Problem #PRA4NP9 "PRA4NP9 - Separate - change unknown 2"

Lona had 76 quarters. She used some quarters to buy a snack. Now, she only has 13 quarters. How many quarters did Lona spend on her snack?

Algebra:

✓ 63

Hints:

- First, start by drawing the 76 quarters that Lona had at the beginning

Then erase the 13 quarters that she had left

You may want to draw group of ten.

- The number of quarters that Lona spent to buy snack is the same as $76 - 13$

$$76 - 13 = 63$$

Type in 63

471) Problem #PRA4NQA "PRA4NQA - Join - start unknown 2"

At the beginning, Lona had some clamps. On her birthday, she got 30 more clamps from her mother.

Now, The total number of clamps that she has is 87.

How many clamps did Lona have at the beginning?

Algebra:

✓ 57

Hints:

- First draw the 87 clamps,

Then erase 30 clamps that her mother gave to her

You may want to draw group of ten.

- The number of clamps that Lona have at the beginning is the same as $87 - 30$

$$87 - 30 = 57$$

Type in 57

472) Problem #PRA4NQB "PRA4NQB - Separate - change unknown"

Lisa had 74 nickels. The next day, she gave some nickels to her friend. Now, she has 33 nickels. How many nickels did Lisa give to her friend?

Algebra:

✓ 41

Hints:

- First, start by drawing the 74 nickels that Lisa had at the beginning

Then erase the 33 nickels that she had left

You may want to draw group of ten.

- The number of nickels that Lisa gave to her friend is the same as $74 - 33$

$$74 - 33 = 41$$

Type in 41

473) Problem #PRA4NQC "PRA4NQC - Join - start unknown 2"

At the beginning, Isabella had some rubberbands. On her birthday, she got 29 more rubberbands from her mother.

Now, The total number of rubberbands that she has is 96.

How many rubberbands did Isabella have at the beginning?

Algebra:

✓ 67

Hints:

- First draw the 96 rubberbands,

Then erase 29 rubberbands that her mother gave to her

You may want to draw group of ten.

- The number of rubberbands that Isabella have at the beginning is the same as $96 - 29$

$$96 - 29 = 67$$

Type in 67

474) Problem #PRA4NQD "PRA4NQD - Separate - change unknown"

Lisa had 81 nickels. The next day, she gave some nickels to her friend. Now, she has 39 nickels. How many nickels did Lisa give to her friend?

Algebra:

✓ 42

Hints:

- First, start by drawing the 81 nickels that Lisa had at the beginning

Then erase the 39 nickels that she had left

You may want to draw group of ten.

- The number of nickels that Lisa gave to her friend is the same as $81 - 39$

$$81 - 39 = 42$$

Type in 42

475) Problem #PRA4NQE "PRA4NQE - Join - change unknown"

Ronaldo had 19 candies and Ronaldo's friend gave him more candies on his birthday. Now he has 52 candies. How many candies did Ronaldo's friend give him?

Algebra:

✓ 33

Hints:

- First draw 52 candies,

Then erase 19 candies that Ronaldo had at the beginning

You may want to draw the group of ten.

- The number of candies that Ronaldo's friend gave him is $52 - 19$

$$52 - 19 = 33$$

Type in 33

476) Problem #PRA4NQF "PRA4NQF - Separate - change unknown"

Alice had 58 pennies. The next day, she gave some pennies to her friend. Now, she has 36 pennies.

How many pennies did Alice give to her friend?

Algebra:

✓ 22

Hints:

- First, start by drawing the 58 pennies that Alice had at the beginning

Then erase the 36 pennies that she had left

You may want to draw group of ten.

- The number of pennies that Alice gave to her friend is the same as $58 - 36$

$$58 - 36 = 22$$

Type in 22

477) Problem #PRA4NQG "PRA4NQG - Join - change unknown"

Ronaldo had 39 candies and Ronaldo's friend gave him more candies on his birthday. Now he has 62 candies. How many candies did Ronaldo's friend give him?

Algebra:

✓ 23

Hints:

- First draw 62 candies,

Then erase 39 candies that Ronaldo had at the beginning

You may want to draw the group of ten.

- The number of candies that Ronaldo's friend gave him is $62 - 39$

$$62 - 39 = 23$$

Type in 23

478) Problem #PRA4NQH "PRA4NQH - Separate - change unknown 2"

Lien had 51 pennies. She used some pennies to buy a snack. Now, she only has 16 pennies. How many pennies did Lien spend on her snack?

Algebra:

✓ 35

Hints:

- First, start by drawing the 51 pennies that Lien had at the beginning

Then erase the 16 pennies that she had left

You may want to draw group of ten.

- The number of pennies that Lien spent to buy snack is the same as $51 - 16$

$$51 - 16 = 35$$

Type in 35

479) Problem #PRA4NQJ "PRA4NQJ - Join - start unknown"

On Monday Alice had some pennies. The next day, her friend gave 50 more pennies to her. Now, she has 81 pennies. How many pennies did Alice have on Monday?

Algebra:

✓ 31

Hints:

- First draw the 81 pennies,

Then erase 50 pennies that her friend gave to her

You may want to draw group of ten.

- The number of pennies that Alice have on Monday is the same as $81 - 50$

$$81 - 50 = 31$$

Type in 31

480) Problem #PRA4E7A "PRA4E7A - Evaluation"

A)

Congratulations on getting three problems correct in a row! This problem set almost done. We want to ask you two questions about your assignment.

Did you enjoy these problems?

Multiple choice:

- ✓ I enjoyed these problem a lot
- ✓ I enjoyed them some
- ✓ I did not enjoy them

B)

2. Did you learn much from these problems?

Multiple choice:

- ✓ I think I learned a lot
- ✓ I think I learn some
- ✓ I am not sure if I learned

481) Problem #PRA4BB9 "PRA4BB9 - Now you are going..."

A) Now we are going to ask you more questions that should be harder. Use what you learned in this skill builder to answer them.

Multiple choice:

- ✓ I am ready to work

Hints:

- The answer is 'I am ready to work'

B) On Monday Lisa had some nickels. Tuesday, her friend Huadong, gave her 32 more nickels. On Wednesday, she gave her other friend Tamisha 20 nickles so she could buy lunch. Lisa was left with 92 nickels. How many nickels did Lisa start with on Monday?

Algebra:

- ✓ 80

Hints:

- Start by drawing 92 nickels that Lisa had left.

Then draw 20 more nickels that Lisa gave to Tamisha.

Finally remove 32 nickels that her friend Huadong gave her.

You may want to draw group of tens.

- The answer is the same as: $92 + 20 - 32$.

$$92 + 20 - 32 = 80$$

Type in 80

C) Peter had 19 candies and Peter's friend gave him more candies on his birthday. Peter then gave 3 to his other friend Bob. Now he has 62 candies. How many candies did Peter's friend give him?

Algebra:

- ✓ 46

Hints:

- Start by drawing 62 candies that Peter has now.

Then draw 3 candies that Peter gave to Bob.

Finally remove 19 candies that Peter had at beginning.

You may want to draw group of tens.

- The answer is the same as: $62 + 3 - 19$.

$$62 + 3 - 19 = 46$$

Type in 46

7.1.2. Elapse Time

Problem Set "SKILL BUILDER Elapsed Time 2.MD.C.7 EX" id:[PSASA67]

Select All

1) Problem #PRA4MUZ "PRA4MUZ - Video check"

This problem set includes video, so please make sure your volume is turned **on** and you have headphones plugged in.

Please watch the video below and enter the code provided in the video as your answer to this question. If you can't see or hear the video, please type **novideo** as your answer.

Fill in:

- ✓ WPI
- ✓ wpi
- ✓ Wpi

2) Problem #PRA4NMY "PRA4NMY - Elapsed Time - 7:30 to 4:15 (Older)"

How much time has passed from **7:30 am** to **4:15 pm**?

Multiple choice:

- ✗ 8 hours and a half
-
- ✗ 8 hours
-
- ✗ 7 hours and one quarter hour
-
- ✓ 8 hours and three quarters hour

3) Problem #PRA4J6C "PRA4J6C - Elapsed Time - 7:30 to 4:15 (Younger)"

How much time has passed from **7:30 am** to **4:15 pm**?

Multiple choice:

- 8 hours and a half
-
- 8 hours
-
- 7 hours and one quarter hour
-
- 8 hours and three quarters hour

4) Problem #PRA4J54 "PRA4J54 - Elapsed Time - 45-to-20"

How much time has passed from **8:45 am** to **5:15 pm**?

Multiple choice:

- 8 hours and a half
- 8 hours
-
- 7 hours and one quarter hour
-
- 8 hours and three quarters hour
-

5) Problem #PRA4J56 "PRA4J56 - Elapsed Time - 30-to-20"

How much time has passed from **7:30 am** to **3:20 pm** ?

Multiple choice:

- 7 hours and fifty minutes
- 7 hours
-
- 6 hours and twenty minutes
-
- 8 hours and fifteen minutes
-

6) Problem #PRA47EY "PRA47EY - Elapsed Time - 15-to-20"

How much time has passed from **9:15 am** to **2:20 pm** ?

Multiple choice:

✓ 5 hours and five minutes

✗ 4 hours

- From **9:15 am** to **noon** is **2 hours and forty five minutes**.

From **noon** to **2:20 pm** is **2 hours and twenty minutes**.

Thus, from 9:15 am to 2:20 pm is

2 hours + forty five minutes + **2 + twenty minutes** = **4 hours and sixty five minutes**.

= **5 hours and five minutes**.

✗ 3 hours and twenty minutes

- From **9:15 am** to **noon** is **2 hours and forty five minutes**.

From **noon** to **2:20 pm** is **2 hours and twenty minutes**.

Thus, from 9:15 am to 2:20 pm is

2 hours + forty five minutes + **2 + twenty minutes** = **4 hours and sixty five minutes**.

= **5 hours and five minutes**.

✗ 5 hours and fifteen minutes

- From **9:15 am** to **noon** is **2 hours and forty five minutes**.

From **noon** to **2:20 pm** is **2 hours and twenty minutes**.

Thus, from 9:15 am to 2:20 pm is

2 hours + forty five minutes. + **2 + twenty minutes** = **4 hours and sixty five minutes**.

= **5 hours and five minutes**.

7) Problem #PRA4RHH "PRA4RHH - Good Job! You are..."

Good Job! You are done. Press "OK" to finish.

Multiple choice:

OK

Hints:

- The answer is OK.

8) Problem #PRA47EM "PRA47EM - Elapsed Time - 30-to-20"

How much time has passed from **10:30 am** to **2:20 pm** ?

Multiple choice:

3 hours and fifty minutes

3 hours

- From **10:30 am** to **noon** is **1 hours and thirty minutes**.

From **noon** to **2:20 pm** is **2 hours and twenty minutes**.

Thus, from 10:30 am to 2:20 pm is

1 hours + thirty minutes + **2 + twenty minutes** = **3 hours and fifty minutes**.

2 hours and twenty minutes

- From **10:30 am** to **noon** is **1 hours and thirty minutes**.

From **noon** to **2:20 pm** is **2 hours and twenty minutes**.

Thus, from 10:30 am to 2:20 pm is

1 hours + thirty minutes + 2 + twenty minutes = 3 hours and fifty minutes.

✗ 4 hours and fifteen minutes

- From **10:30 am** to **noon** is **1 hours and thirty minutes**.

From **noon** to **2:20 pm** is **2 hours and twenty minutes**.

Thus, from 10:30 am to 2:20 pm is

1 hours + thirty minutes + 2 + twenty minutes = 3 hours and fifty minutes.

9) Problem #PRA47EN "PRA47EN - Elapsed Time - 30-to-20"

How much time has passed from **8:30 am** to **5:20 pm** ?

Multiple choice:

✓ 8 hours and fifty minutes

✗ 8 hours

- From **8:30 am** to **noon** is **3 hours and thirty minutes**.

From **noon** to **5:20 pm** is **5 hours and twenty minutes**.

Thus, from 8:30 am to 5:20 pm is

3 hours + thirty minutes + 5 + twenty minutes = 8 hours and fifty minutes.

✘ 7 hours and twenty minutes

- From 8:30 am to noon is 3 hours and thirty minutes.

From noon to 5:20 pm is 5 hours and twenty minutes.

Thus, from 8:30 am to 5:20 pm is

3 hours + thirty minutes + 5 + twenty minutes = 8 hours and fifty minutes.

✘ 9 hours and fifteen minutes

- From 8:30 am to noon is 3 hours and thirty minutes.

From noon to 5:20 pm is 5 hours and twenty minutes.

Thus, from 8:30 am to 5:20 pm is

3 hours + thirty minutes + 5 + twenty minutes = 8 hours and fifty minutes.

10) Problem #PRA47EP "PRA47EP - Elapsed Time - 30-to-20"

How much time has passed from 9:30 am to 2:20 pm ?

Multiple choice:

✓ 4 hours and fifty minutes

✘ 4 hours

- From 9:30 am to noon is 2 hours and thirty minutes.

From noon to 2:20 pm is 2 hours and twenty minutes.

Thus, from 9:30 am to 2:20 pm is

2 hours + thirty minutes + 2 + twenty minutes = 4 hours and fifty minutes.

✗ 3 hours and twenty minutes

- From 9:30 am to noon is 2 hours and thirty minutes.

From noon to 2:20 pm is 2 hours and twenty minutes.

Thus, from 9:30 am to 2:20 pm is

2 hours + thirty minutes + 2 + twenty minutes = 4 hours and fifty minutes.

✗ 5 hours and fifteen minutes

- From 9:30 am to noon is 2 hours and thirty minutes.

From noon to 2:20 pm is 2 hours and twenty minutes.

Thus, from 9:30 am to 2:20 pm is

2 hours + thirty minutes + 2 + twenty minutes = 4 hours and fifty minutes.

11) Problem #PRA47EQ "PRA47EQ - Elapsed Time - 30-to-20"

How much time has passed from 7:30 am to 2:20 pm ?

Multiple choice:

✓ 6 hours and fifty minutes

✗ 6 hours

- From 7:30 am to noon is 4 hours and thirty minutes.

From **noon** to **2:20 pm** is 2 hours and twenty minutes.

Thus, from 7:30 am to 2:20 pm is

4 hours + thirty minutes + 2 + twenty minutes = 6 hours and fifty minutes.

✘ 5 hours and twenty minutes

- From **7:30 am** to **noon** is 4 hours and thirty minutes.

From **noon** to **2:20 pm** is 2 hours and twenty minutes.

Thus, from 7:30 am to 2:20 pm is

4 hours + thirty minutes + 2 + twenty minutes = 6 hours and fifty minutes.

✘ 7 hours and fifteen minutes

- From **7:30 am** to **noon** is 4 hours and thirty minutes.

From **noon** to **2:20 pm** is 2 hours and twenty minutes.

Thus, from 7:30 am to 2:20 pm is

4 hours + thirty minutes + 2 + twenty minutes = 6 hours and fifty minutes.

12) Problem #PRA47ER "PRA47ER - Elapsed Time - 30-to-20"

How much time has passed from **8:30 am** to **2:20 pm** ?

Multiple choice:

✓ 5 hours and fifty minutes

✗ 5 hours

- From **8:30 am** to **noon** is **3 hours and thirty minutes**.

From **noon** to **2:20 pm** is **2 hours and twenty minutes**.

Thus, from 8:30 am to 2:20 pm is

3 hours + thirty minutes + 2 + twenty minutes = 5 hours and fifty minutes.

✗ 4 hours and twenty minutes

- From **8:30 am** to **noon** is **3 hours and thirty minutes**.

From **noon** to **2:20 pm** is **2 hours and twenty minutes**.

Thus, from 8:30 am to 2:20 pm is

3 hours + thirty minutes + 2 + twenty minutes = 5 hours and fifty minutes.

✗ 6 hours and fifteen minutes

- From **8:30 am** to **noon** is **3 hours and thirty minutes**.

From **noon** to **2:20 pm** is **2 hours and twenty minutes**.

Thus, from 8:30 am to 2:20 pm is

3 hours + thirty minutes + 2 + twenty minutes = 5 hours and fifty minutes.

13) Problem #PRA47ES "PRA47ES - Elapsed Time - 45-to-20"

How much time has passed from **9:45 am** to **3:15 pm**?

Multiple choice:

✓ 5 hours and a half

✗ 5 hours

- From **9:45 am** to **noon** is 2 hours and fifteen minutes. In other words, **2 and one quarter hours**.

From **noon** to **3:15 pm** is 3 hours and fifteen minutes. In other words, **3 and one quarter hours**.

Thus, from 9:45 am to 3:15 pm is

$2 + \text{one quarter} + 3 + \text{one quarter} = \mathbf{5 \text{ and a half hours}}$.

✗ 4 hours and one quarter hour

- From **9:45 am** to **noon** is 2 hours and fifteen minutes. In other words, **2 and one quarter hours**.

From **noon** to **3:15 pm** is 3 hours and fifteen minutes. In other words, **3 and one quarter hours**.

Thus, from 9:45 am to 3:15 pm is

$2 + \text{one quarter} + 3 + \text{one quarter} = \mathbf{5 \text{ and a half hours}}$.

✗ 5 hours and three quarters hour

- From **9:45 am** to **noon** is 2 hours and fifteen minutes. In other words, **2 and one quarter hours**.

From **noon** to **3:15 pm** is 3 hours and fifteen minutes. In other words, **3 and one quarter**

hours.

Thus, from 9:45 am to 3:15 pm is

$2 + \text{one quarter} + 3 + \text{one quarter} = 5 \text{ and a half hours.}$

14) Problem #PRA47ET "PRA47ET - Elapsed Time - 45-to-20"

How much time has passed from **10:45 am** to **2:15 pm**?

Multiple choice:

3 hours and a half

3 hours

- From **10:45 am** to **noon** is 1 hours and fifteen minutes. In other words, $1 \text{ and one quarter hours.}$

From **noon** to **2:15 pm** is 2 hours and fifteen minutes. In other words, $2 \text{ and one quarter hours.}$

Thus, from 10:45 am to 2:15 pm is

$1 + \text{one quarter} + 2 + \text{one quarter} = 3 \text{ and a half hours.}$

2 hours and one quarter hour

- From **10:45 am** to **noon** is 1 hours and fifteen minutes. In other words, $1 \text{ and one quarter hours.}$

From **noon** to **2:15 pm** is 2 hours and fifteen minutes. In other words, $2 \text{ and one quarter hours.}$

Thus, from 10:45 am to 2:15 pm is

$1 + \text{one quarter} + 2 + \text{one quarter} = 3 \text{ and a half hours.}$

✗ 3 hours and three quarters hour

• From **10:45 am** to **noon** is 1 hours and fifteen minutes. In other words, **1 and one quarter hours.**

From **noon** to **2:15 pm** is 2 hours and fifteen minutes. In other words, **2 and one quarter hours.**

Thus, from 10:45 am to 2:15 pm is

$1 + \text{one quarter} + 2 + \text{one quarter} = 3 \text{ and a half hours.}$

15) Problem #PRA47EU "PRA47EU - Elapsed Time - 45-to-20"

How much time has passed from **10:45 am** to **2:15 pm**?

Multiple choice:

✓ 3 hours and a half

✗ 3 hours

• From **10:45 am** to **noon** is 1 hours and fifteen minutes. In other words, **1 and one quarter hours.**

From **noon** to **2:15 pm** is 2 hours and fifteen minutes. In other words, **2 and one quarter hours.**

Thus, from 10:45 am to 2:15 pm is

$1 + \text{one quarter} + 2 + \text{one quarter} = 3 \text{ and a half hours.}$

✗ 2 hours and one quarter hour

• From **10:45 am** to **noon** is 1 hours and fifteen minutes. In other words, **1 and one quarter**

hours.

From **noon** to **2:15 pm** is 2 hours and fifteen minutes. In other words, **2 and one quarter hours**.

Thus, from 10:45 am to 2:15 pm is

$1 + \text{one quarter} + 2 + \text{one quarter} = \mathbf{3 \text{ and a half hours}}$.

✗ 3 hours and three quarters hour

- From **10:45 am** to **noon** is 1 hours and fifteen minutes. In other words, **1 and one quarter hours**.

From **noon** to **2:15 pm** is 2 hours and fifteen minutes. In other words, **2 and one quarter hours**.

Thus, from 10:45 am to 2:15 pm is

$1 + \text{one quarter} + 2 + \text{one quarter} = \mathbf{3 \text{ and a half hours}}$.

16) Problem #PRA47EV "PRA47EV - Elapsed Time - 45-to-20"

How much time has passed from **8:45 am** to **2:15 pm**?

Multiple choice:

✓ 5 hours and a half

✗ 5 hours

- From **8:45 am** to **noon** is 3 hours and fifteen minutes. In other words, **3 and one quarter hours**.

From **noon** to **2:15 pm** is 2 hours and fifteen minutes. In other words, **2 and one quarter**

hours.

Thus, from 8:45 am to 2:15 pm is

$3 + \text{one quarter} + 2 + \text{one quarter} = 5 \text{ and a half hours.}$

✘ 4 hours and one quarter hour

- From **8:45 am** to **noon** is 3 hours and fifteen minutes. In other words, **3 and one quarter hours.**

From **noon** to **2:15 pm** is 2 hours and fifteen minutes. In other words, **2 and one quarter hours.**

Thus, from 8:45 am to 2:15 pm is

$3 + \text{one quarter} + 2 + \text{one quarter} = 5 \text{ and a half hours.}$

✘ 5 hours and three quarters hour

- From **8:45 am** to **noon** is 3 hours and fifteen minutes. In other words, **3 and one quarter hours.**

From **noon** to **2:15 pm** is 2 hours and fifteen minutes. In other words, **2 and one quarter hours.**

Thus, from 8:45 am to 2:15 pm is

$3 + \text{one quarter} + 2 + \text{one quarter} = 5 \text{ and a half hours.}$

17) Problem #PRA47EW "PRA47EW - Elapsed Time - 45-to-20"

How much time has passed from **8:45 am** to **1:15 pm**?

Multiple choice:

✓ 4 hours and a half

✗ 4 hours

- From **8:45 am** to **noon** is 3 hours and fifteen minutes. In other words, **3 and one quarter hours**.

From **noon** to **1:15 pm** is 1 hours and fifteen minutes. In other words, **1 and one quarter hours**.

Thus, from 8:45 am to 1:15 pm is

$3 + \text{one quarter} + 1 + \text{one quarter} = 4 \text{ and a half hours}$.

✗ 3 hours and one quarter hour

- From **8:45 am** to **noon** is 3 hours and fifteen minutes. In other words, **3 and one quarter hours**.

From **noon** to **1:15 pm** is 1 hours and fifteen minutes. In other words, **1 and one quarter hours**.

Thus, from 8:45 am to 1:15 pm is

$3 + \text{one quarter} + 1 + \text{one quarter} = 4 \text{ and a half hours}$.

✗ 4 hours and three quarters hour

- From **8:45 am** to **noon** is 3 hours and fifteen minutes. In other words, **3 and one quarter hours**.

From **noon** to **1:15 pm** is 1 hours and fifteen minutes. In other words, **1 and one quarter hours**.

Thus, from 8:45 am to 1:15 pm is

$3 + \text{one quarter} + 1 + \text{one quarter} = 4 \text{ and a half hours.}$

18) Problem #PRA47EX "PRA47EX - Elapsed Time - 15-to-20"

How much time has passed from **7:15 am** to **3:20 pm** ?

Multiple choice:

8 hours and five minutes

7 hours

- From **7:15 am** to **noon** is **4 hours and forty five minutes.**

From **noon** to **3:20 pm** is **3 hours and twenty minutes.**

Thus, from 7:15 am to 3:20 pm is

$4 \text{ hours} + \text{forty five minutes.} + 3 + \text{twenty minutes} = 7 \text{ hours and sixty five minutes.}$

$= 8 \text{ hours and five minutes.}$

6 hours and twenty minutes

- From **7:15 am** to **noon** is **4 hours and forty five minutes.**

From **noon** to **3:20 pm** is **3 hours and twenty minutes.**

Thus, from 7:15 am to 3:20 pm is

4 hours + forty five minutes + 3 + twenty minutes = 7 hours and sixty five minutes.

= 8 hours and five minutes.

✘ 8 hours and fifteen minutes

- From 7:15 am to noon is 4 hours and forty five minutes.

From noon to 3:20 pm is 3 hours and twenty minutes.

Thus, from 7:15 am to 3:20 pm is

4 hours + forty five minutes + 3 + twenty minutes = 7 hours and sixty five minutes.

= 8 hours and five minutes.

19) Duplicate problem: Problem #771828 "PRA47EY - Elapsed Time - 15-to-20" was not displayed.

20) Problem #PRA47EZ "PRA47EZ - Elapsed Time - 15-to-20"

How much time has passed from 8:15 am to 3:20 pm ?

Multiple choice:

✔ 7 hours and five minutes

✘ 6 hours

- From 8:15 am to noon is 3 hours and forty five minutes.

From noon to 3:20 pm is 3 hours and twenty minutes.

Thus, from 8:15 am to 3:20 pm is

3 hours + forty five minutes + 3 + twenty minutes = 6 hours and sixty five minutes.

= 7 hours and five minutes.

✘ 5 hours and twenty minutes

- From 8:15 am to noon is 3 hours and forty five minutes.

From noon to 3:20 pm is 3 hours and twenty minutes.

Thus, from 8:15 am to 3:20 pm is

3 hours + forty five minutes + 3 + twenty minutes = 6 hours and sixty five minutes.

= 7 hours and five minutes.

✘ 7 hours and fifteen minutes

- From 8:15 am to noon is 3 hours and forty five minutes.

From noon to 3:20 pm is 3 hours and twenty minutes.

Thus, from 8:15 am to 3:20 pm is

3 hours + forty five minutes + 3 + twenty minutes = 6 hours and sixty five minutes.

= 7 hours and five minutes.

21) Problem #PRA47E2 "PRA47E2 - Elapsed Time - 15-to-20"

How much time has passed from 8:15 am to 5:20 pm ?

Multiple choice:

✓ 9 hours and five minutes

✗ 8 hours

- From **8:15 am** to **noon** is **3 hours and forty five minutes**.

From **noon** to **5:20 pm** is **5 hours and twenty minutes**.

Thus, from 8:15 am to 5:20 pm is

3 hours + forty five minutes. + **5 + twenty minutes** = **8 hours and sixty five minutes**.

= **9 hours and five minutes**.

✗ 7 hours and twenty minutes

- From **8:15 am** to **noon** is **3 hours and forty five minutes**.

From **noon** to **5:20 pm** is **5 hours and twenty minutes**.

Thus, from 8:15 am to 5:20 pm is

3 hours + forty five minutes. + **5 + twenty minutes** = **8 hours and sixty five minutes**.

= **9 hours and five minutes**.

✗ 9 hours and fifteen minutes

- From **8:15 am** to **noon** is **3 hours and forty five minutes**.

From **noon** to **5:20 pm** is **5 hours and twenty minutes**.

Thus, from 8:15 am to 5:20 pm is

3 hours + forty five minutes. + **5 + twenty minutes** = **8 hours and sixty five minutes**.

= **9 hours and five minutes**.

22) Problem #PRA47E3 "PRA47E3 - Elapsed Time - 15-to-20"

How much time has passed from **9:15 am** to **3:20 pm** ?

Multiple choice:

6 hours and five minutes

5 hours

- From **9:15 am** to **noon** is **2 hours and forty five minutes**.

From **noon** to **3:20 pm** is **3 hours and twenty minutes**.

Thus, from 9:15 am to 3:20 pm is

2 hours + forty five minutes. + **3 + twenty minutes** = **5 hours and sixty five minutes**.

= **6 hours and five minutes**.

4 hours and twenty minutes

- From **9:15 am** to **noon** is **2 hours and forty five minutes**.

From **noon** to **3:20 pm** is **3 hours and twenty minutes**.

Thus, from 9:15 am to 3:20 pm is

2 hours + forty five minutes + 3 + twenty minutes = 5 hours and sixty five minutes.

= 6 hours and five minutes.

✘ 6 hours and fifteen minutes

- From 9:15 am to noon is 2 hours and forty five minutes.

From noon to 3:20 pm is 3 hours and twenty minutes.

Thus, from 9:15 am to 3:20 pm is

2 hours + forty five minutes + 3 + twenty minutes = 5 hours and sixty five minutes.

= 6 hours and five minutes.

23) Problem #PRA47E4 "PRA47E4 - Elapsed time - 25p to 15a"

How much time has passed from 8:25 pm to 4:15 am of the next day?

Multiple choice:

✔ 7 hours and fifty minutes

✘ 7 hours

- From 8:25 pm to midnight is 3 hours and thirty five minutes.

From midnight to 4:15 am is 4 hours and fifteen minutes.

Thus, from 8:25 pm to 4:15 am of the next day is

3 hours + thirty five minutes + 4 + fifteen minutes = 7 hours and fifty minutes.

✗ 6 hours and twenty minutes

- From 8:25 pm to midnight is 3 hours and thirty five minutes.

From midnight to 4:15 am is 4 hours and fifteen minutes.

Thus, from 8:25 pm to 4:15 am of the next day is

3 hours + thirty five minutes + 4 + fifteen minutes = 7 hours and fifty minutes.

✗ 8 hours and twenty five minutes

- From 8:25 pm to midnight is 3 hours and thirty five minutes.

From midnight to 4:15 am is 4 hours and fifteen minutes.

Thus, from 8:25 pm to 4:15 am of the next day is

3 hours + thirty five minutes + 4 + fifteen minutes = 7 hours and fifty minutes.

24) Problem #PRA47E5 "PRA47E5 - Elapsed time - 25p to 15a"

How much time has passed from 7:25 pm to 2:15 am of the next day?

Multiple choice:

✓ 6 hours and fifty minutes

✗ 6 hours

- From 7:25 pm to midnight is 4 hours and thirty five minutes.

From **midnight** to **2:15 am** is 2 hours and fifteen minutes.

Thus, from 7:25 pm to 2:15 am of the next day is

4 hours + thirty five minutes + 2 + fifteen minutes = 6 hours and fifty minutes.

✘ 5 hours and twenty minutes

- From **7:25 pm** to **midnight** is 4 hours and thirty five minutes.

From **midnight** to **2:15 am** is 2 hours and fifteen minutes.

Thus, from 7:25 pm to 2:15 am of the next day is

4 hours + thirty five minutes + 2 + fifteen minutes = 6 hours and fifty minutes.

✘ 7 hours and twenty five minutes

- From **7:25 pm** to **midnight** is 4 hours and thirty five minutes.

From **midnight** to **2:15 am** is 2 hours and fifteen minutes.

Thus, from 7:25 pm to 2:15 am of the next day is

4 hours + thirty five minutes + 2 + fifteen minutes = 6 hours and fifty minutes.

25) Problem #PRA47E6 "PRA47E6 - Elapsed time - 25p to 15a"

How much time has passed from **7:25 pm** to **2:15 am** of the next day?

Multiple choice:

✔ 6 hours and fifty minutes

✘ 6 hours

- From **7:25 pm** to **midnight** is **4 hours and thirty five minutes**.

From **midnight** to **2:15 am** is **2 hours and fifteen minutes**.

Thus, from 7:25 pm to 2:15 am of the next day is

4 hours + thirty five minutes.+ **2 + fifteen minutes** = **6 hours and fifty minutes**.

x 5 hours and twenty minutes

- From **7:25 pm** to **midnight** is **4 hours and thirty five minutes**.

From **midnight** to **2:15 am** is **2 hours and fifteen minutes**.

Thus, from 7:25 pm to 2:15 am of the next day is

4 hours + thirty five minutes.+ **2 + fifteen minutes** = **6 hours and fifty minutes**.

x 7 hours and twenty five minutes

- From **7:25 pm** to **midnight** is **4 hours and thirty five minutes**.

From **midnight** to **2:15 am** is **2 hours and fifteen minutes**.

Thus, from 7:25 pm to 2:15 am of the next day is

4 hours + thirty five minutes.+ **2 + fifteen minutes** = **6 hours and fifty minutes**.

How much time has passed from **10:25 pm** to **2:15 am** of the next day?

Multiple choice:

✓ 3 hours and fifty minutes

✗ 3 hours

- From **10:25 pm** to **midnight** is **1 hours and thirty five minutes**.

From **midnight** to **2:15 am** is **2 hours and fifteen minutes**.

Thus, from 10:25 pm to 2:15 am of the next day is

1 hours + thirty five minutes. + **2 + fifteen minutes** = **3 hours and fifty minutes**.

✗ 2 hours and twenty minutes

- From **10:25 pm** to **midnight** is **1 hours and thirty five minutes**.

From **midnight** to **2:15 am** is **2 hours and fifteen minutes**.

Thus, from 10:25 pm to 2:15 am of the next day is

1 hours + thirty five minutes. + **2 + fifteen minutes** = **3 hours and fifty minutes**.

✗ 4 hours and twenty five minutes

- From **10:25 pm** to **midnight** is **1 hours and thirty five minutes**.

From **midnight** to **2:15 am** is **2 hours and fifteen minutes**.

Thus, from 10:25 pm to 2:15 am of the next day is

1 hours + thirty five minutes + 2 + fifteen minutes = 3 hours and fifty minutes.

27) Problem #PRA47E8 "PRA47E8 - Elapsed time - 25p to 15a"

How much time has passed from 9:25 pm to 4:15 am of the next day?

Multiple choice:

✓ 6 hours and fifty minutes

✗ 6 hours

- From 9:25 pm to midnight is 2 hours and thirty five minutes.

From midnight to 4:15 am is 4 hours and fifteen minutes.

Thus, from 9:25 pm to 4:15 am of the next day is

2 hours + thirty five minutes + 4 + fifteen minutes = 6 hours and fifty minutes.

✗ 5 hours and twenty minutes

- From 9:25 pm to midnight is 2 hours and thirty five minutes.

From midnight to 4:15 am is 4 hours and fifteen minutes.

Thus, from 9:25 pm to 4:15 am of the next day is

2 hours + thirty five minutes + 4 + fifteen minutes = 6 hours and fifty minutes.

✗ 7 hours and twenty five minutes

- From 9:25 pm to midnight is 2 hours and thirty five minutes.

From midnight to 4:15 am is 4 hours and fifteen minutes.

Thus, from 9:25 pm to 4:15 am of the next day is

2 hours + thirty five minutes + 4 + fifteen minutes = 6 hours and fifty minutes.

28) Problem #PRA47E9 "PRA47E9 - Elapsed Time - 35-to-20"

How much time has passed from 10:35 am to 5:20 pm?

Multiple choice:

6 hours and three quarters hour

6 hours

- From 10:35 am to noon is 1 hours and twenty five minutes.

From noon to 5:20 pm is 5 hours and twenty minutes.

Thus, from 10:35 am to 5:20 pm is

1 hours + twenty five minutes + 5 + twenty minutes = 6 hours and forty five minutes.

5 hours and twenty minutes

- From 10:35 am to noon is 1 hours and twenty five minutes.

From noon to 5:20 pm is 5 hours and twenty minutes.

Thus, from 10:35 am to 5:20 pm is

1 hours + twenty five minutes + 5 + twenty minutes = 6 hours and forty five minutes.

7 hours and fifteen minutes

- From 10:35 am to noon is 1 hours and twenty five minutes.

From **noon** to **5:20 pm** is **5 hours and twenty minutes**.

Thus, from 10:35 am to 5:20 pm is

1 hours + twenty five minutes + 5 + twenty minutes = 6 hours and forty five minutes.

29) Problem #PRA47FA "PRA47FA - Elapsed Time - 35-to-20"

How much time has passed from **9:35 am** to **3:20 pm**?

Multiple choice:

5 hours and three quarters hour

5 hours

- From **9:35 am** to **noon** is **2 hours and twenty five minutes**.

From **noon** to **3:20 pm** is **3 hours and twenty minutes**.

Thus, from 9:35 am to 3:20 pm is

2 hours + twenty five minutes + 3 + twenty minutes = 5 hours and forty five minutes.

4 hours and twenty minutes

- From **9:35 am** to **noon** is **2 hours and twenty five minutes**.

From **noon** to **3:20 pm** is **3 hours and twenty minutes**.

Thus, from 9:35 am to 3:20 pm is

2 hours + twenty five minutes + 3 + twenty minutes = 5 hours and forty five minutes.

6 hours and fifteen minutes

- From **9:35 am** to **noon** is **2 hours and twenty five minutes**.

From **noon** to **3:20 pm** is **3 hours and twenty minutes**.

Thus, from 9:35 am to 3:20 pm is

2 hours + twenty five minutes + 3 + twenty minutes = 5 hours and forty five minutes.

30) Problem #PRA47FB "PRA47FB - Elapsed Time - 35-to-20"

How much time has passed from **7:35 am** to **2:20 pm**?

Multiple choice:

- 6 hours and three quarters hour
- 6 hours

- From **7:35 am** to **noon** is **4 hours and twenty five minutes**.

From **noon** to **2:20 pm** is **2 hours and twenty minutes**.

Thus, from 7:35 am to 2:20 pm is

4 hours + twenty five minutes + 2 + twenty minutes = 6 hours and forty five minutes.

- 5 hours and twenty minutes

- From **7:35 am** to **noon** is **4 hours and twenty five minutes**.

From **noon** to **2:20 pm** is **2 hours and twenty minutes**.

Thus, from 7:35 am to 2:20 pm is

4 hours + twenty five minutes + 2 + twenty minutes = 6 hours and forty five minutes.

✘ 7 hours and fifteen minutes

- From 7:35 am to noon is 4 hours and twenty five minutes.

From noon to 2:20 pm is 2 hours and twenty minutes.

Thus, from 7:35 am to 2:20 pm is

4 hours + twenty five minutes + 2 + twenty minutes = 6 hours and forty five minutes.

31) Problem #PRA47FC "PRA47FC - Elapsed Time - 35-to-20"

How much time has passed from 10:35 am to 2:20 pm?

Multiple choice:

✔ 3 hours and three quarters hour

✘ 3 hours

- From 10:35 am to noon is 1 hours and twenty five minutes.

From noon to 2:20 pm is 2 hours and twenty minutes.

Thus, from 10:35 am to 2:20 pm is

1 hours + twenty five minutes + 2 + twenty minutes = 3 hours and forty five minutes.

✘ 2 hours and twenty minutes

- From 10:35 am to noon is 1 hours and twenty five minutes.

From noon to 2:20 pm is 2 hours and twenty minutes.

Thus, from 10:35 am to 2:20 pm is

1 hours + twenty five minutes + 2 + twenty minutes = 3 hours and forty five minutes.

✗ 4 hours and fifteen minutes

- From 10:35 am to noon is 1 hours and twenty five minutes.

From noon to 2:20 pm is 2 hours and twenty minutes.

Thus, from 10:35 am to 2:20 pm is

1 hours + twenty five minutes + 2 + twenty minutes = 3 hours and forty five minutes.

32) Problem #PRA47FD "PRA47FD - Elapsed Time - 35-to-20"

How much time has passed from 9:35 am to 4:20 pm?

Multiple choice:

✓ 6 hours and three quarters hour

✗ 6 hours

- From 9:35 am to noon is 2 hours and twenty five minutes.

From noon to 4:20 pm is 4 hours and twenty minutes.

Thus, from 9:35 am to 4:20 pm is

2 hours + twenty five minutes + 4 + twenty minutes = 6 hours and forty five minutes.

✗ 5 hours and twenty minutes

- From 9:35 am to noon is 2 hours and twenty five minutes.

From **noon** to **4:20 pm** is 4 hours and twenty minutes.

Thus, from 9:35 am to 4:20 pm is

2 hours + twenty five minutes + 4 + twenty minutes = 6 hours and forty five minutes.

✘ 7 hours and fifteen minutes

- From **9:35 am** to **noon** is 2 hours and twenty five minutes.

From **noon** to **4:20 pm** is 4 hours and twenty minutes.

Thus, from 9:35 am to 4:20 pm is

2 hours + twenty five minutes + 4 + twenty minutes = 6 hours and forty five minutes.

33) Problem #PRA47FE "PRA47FE - Elapsed time - 25p to 15a"

How much time has passed from **9:15 pm** to **1:20 am** of the next day?

Multiple choice:

✓ 4 hours and five minutes

✘ 3 hours

- From **9:15 pm** to **midnight** is 2 hours and forty five minutes.

From **midnight** to **1:20 am** is 1 hours and twenty minutes.

Thus, from 9:25 pm to 1:15 am of the next day is

2 hours + forty five minutes + 1 + twenty minutes = 4 hours and five minutes.

✘ 2 hours and twenty minutes

- From **9:15 pm** to **midnight** is 2 hours and forty five minutes.

From **midnight** to **1:20 am** is 1 hour and twenty minutes.

Thus, from 9:25 pm to 1:15 am of the next day is

2 hours + forty five minutes + 1 + twenty minutes = 4 hours and five minutes.

✘ 4 hours and twenty five minutes

- From **9:15 pm** to **midnight** is 2 hours and forty five minutes.

From **midnight** to **1:20 am** is 1 hour and twenty minutes.

Thus, from 9:25 pm to 1:15 am of the next day is

2 hours + forty five minutes + 1 + twenty minutes = 4 hours and five minutes.

34) Problem #PRA47FF "PRA47FF - Elapsed time - 25p to 15a"

How much time has passed from **9:15 pm** to **5:20 am** of the next day?

Multiple choice:

✔ 8 hours and five minutes

✘ 7 hours

- From **9:15 pm** to **midnight** is 2 hours and forty five minutes.

From **midnight** to **5:20 am** is 5 hours and twenty minutes.

Thus, from 9:25 pm to 5:15 am of the next day is

2 hours + forty five minutes + 5 + twenty minutes = 8 hours and five minutes.

✗ 6 hours and twenty minutes

- From 9:15 pm to midnight is 2 hours and forty five minutes.

From midnight to 5:20 am is 5 hours and twenty minutes.

Thus, from 9:25 pm to 5:15 am of the next day is

2 hours + forty five minutes + 5 + twenty minutes = 8 hours and five minutes.

✗ 8 hours and twenty five minutes

- From 9:15 pm to midnight is 2 hours and forty five minutes.

From midnight to 5:20 am is 5 hours and twenty minutes.

Thus, from 9:25 pm to 5:15 am of the next day is

2 hours + forty five minutes + 5 + twenty minutes = 8 hours and five minutes.

35) Problem #PRA47FG "PRA47FG - Elapsed time - 25p to 15a"

How much time has passed from 8:15 pm to 5:20 am of the next day?

Multiple choice:

✓ 9 hours and five minutes

✗ 8 hours

- From 8:15 pm to midnight is 3 hours and forty five minutes.

From **midnight** to **5:20 am** is 5 hours and twenty minutes.

Thus, from 8:25 pm to 5:15 am of the next day is

3 hours + forty five minutes + 5 + twenty minutes = 9 hours and five minutes.

✘ 7 hours and twenty minutes

- From **8:15 pm** to **midnight** is 3 hours and forty five minutes.

From **midnight** to **5:20 am** is 5 hours and twenty minutes.

Thus, from 8:25 pm to 5:15 am of the next day is

3 hours + forty five minutes + 5 + twenty minutes = 9 hours and five minutes.

✘ 9 hours and twenty five minutes

- From **8:15 pm** to **midnight** is 3 hours and forty five minutes.

From **midnight** to **5:20 am** is 5 hours and twenty minutes.

Thus, from 8:25 pm to 5:15 am of the next day is

3 hours + forty five minutes + 5 + twenty minutes = 9 hours and five minutes.

36) Problem #PRA47FH "PRA47FH - Elapsed time - 25p to 15a"

How much time has passed from **9:15 pm** to **1:20 am** of the next day?

Multiple choice:

✔ 4 hours and five minutes

✘ 3 hours

- From **9:15 pm** to **midnight** is **2 hours and forty five minutes**.

From **midnight** to **1:20 am** is **1 hour and twenty minutes**.

Thus, from 9:25 pm to 1:15 am of the next day is

2 hours + forty five minutes + 1 + twenty minutes = 4 hours and five minutes.

x 2 hours and twenty minutes

- From **9:15 pm** to **midnight** is **2 hours and forty five minutes**.

From **midnight** to **1:20 am** is **1 hour and twenty minutes**.

Thus, from 9:25 pm to 1:15 am of the next day is

2 hours + forty five minutes + 1 + twenty minutes = 4 hours and five minutes.

x 4 hours and twenty five minutes

- From **9:15 pm** to **midnight** is **2 hours and forty five minutes**.

From **midnight** to **1:20 am** is **1 hour and twenty minutes**.

Thus, from 9:25 pm to 1:15 am of the next day is

2 hours + forty five minutes + 1 + twenty minutes = 4 hours and five minutes.

How much time has passed from **7:15 pm** to **3:20 am** of the next day?

Multiple choice:

✓ 8 hours and five minutes

✗ 7 hours

- From **7:15 pm** to **midnight** is **4 hours and forty five minutes**.

From **midnight** to **3:20 am** is **3 hours and twenty minutes**.

Thus, from 7:25 pm to 3:15 am of the next day is

4 hours + forty five minutes + 3 + twenty minutes = 8 hours and five minutes.

✗ 6 hours and twenty minutes

- From **7:15 pm** to **midnight** is **4 hours and forty five minutes**.

From **midnight** to **3:20 am** is **3 hours and twenty minutes**.

Thus, from 7:25 pm to 3:15 am of the next day is

4 hours + forty five minutes + 3 + twenty minutes = 8 hours and five minutes.

✗ 8 hours and twenty five minutes

- From **7:15 pm** to **midnight** is **4 hours and forty five minutes**.

From **midnight** to **3:20 am** is **3 hours and twenty minutes**.

Thus, from 7:25 pm to 3:15 am of the next day is

4 hours + forty five minutes + 3 + twenty minutes = 8 hours and five minutes.

38) Problem #PRA46Q5 "PRA46Q5 - Elapsed Time - 45-to-20"

How much time has passed from 8:45 am to 5:15 pm?

Multiple choice:

- 8 hours and a half
 - 8 hours
 -
 - 7 hours and one quarter hour
 -
 - 8 hours and three quarters hour
 -
-

39) Problem #PRA4RHS "PRA4RHS - Elapsed Time - 30-to-20"

How much time has passed from 7:30 am to 3:20 pm ?

Multiple choice:

- 7 hours and fifty minutes
 - 7 hours
 -
 - 6 hours and twenty minutes
 -
 - 8 hours and fifteen minutes
 -
-

40) Duplicate problem: Problem #771828 "PRA47EY - Elapsed Time - 15-to-20" was not displayed.

41) Problem #PRA4RHP "PRA4RHP - Good Job! You are..."

Good Job! You are done. Press "OK" to finish.

Multiple choice:

- OK

Hints:

- The answer is OK.
-

42) Duplicate problem: Problem #771817 "PRA47EM - Elapsed Time - 30-to-20" was not displayed.

43) Duplicate problem: Problem #771818 "PRA47EN - Elapsed Time - 30-to-20" was not

displayed.

44) Duplicate problem: Problem #771819 "PRA47EP - Elapsed Time - 30-to-20" was not displayed.

45) Duplicate problem: Problem #771820 "PRA47EQ - Elapsed Time - 30-to-20" was not displayed.

46) Duplicate problem: Problem #771821 "PRA47ER - Elapsed Time - 30-to-20" was not displayed.

47) Duplicate problem: Problem #771822 "PRA47ES - Elapsed Time - 45-to-20" was not displayed.

48) Duplicate problem: Problem #771823 "PRA47ET - Elapsed Time - 45-to-20" was not displayed.

49) Duplicate problem: Problem #771824 "PRA47EU - Elapsed Time - 45-to-20" was not displayed.

50) Duplicate problem: Problem #771825 "PRA47EV - Elapsed Time - 45-to-20" was not displayed.

51) Duplicate problem: Problem #771826 "PRA47EW - Elapsed Time - 45-to-20" was not displayed.

52) Duplicate problem: Problem #771827 "PRA47EX - Elapsed Time - 15-to-20" was not displayed.

53) Duplicate problem: Problem #771828 "PRA47EY - Elapsed Time - 15-to-20" was not displayed.

54) Duplicate problem: Problem #771829 "PRA47EZ - Elapsed Time - 15-to-20" was not displayed.

55) Duplicate problem: Problem #771830 "PRA47E2 - Elapsed Time - 15-to-20" was not displayed.

56) Duplicate problem: Problem #771831 "PRA47E3 - Elapsed Time - 15-to-20" was not displayed.

57) Duplicate problem: Problem #771832 "PRA47E4 - Elapsed time - 25p to 15a" was not displayed.

58) Duplicate problem: Problem #771833 "PRA47E5 - Elapsed time - 25p to 15a" was not displayed.

59) Duplicate problem: Problem #771834 "PRA47E6 - Elapsed time - 25p to 15a" was not displayed.

60) Duplicate problem: Problem #771835 "PRA47E7 - Elapsed time - 25p to 15a" was not displayed.

61) Duplicate problem: Problem #771836 "PRA47E8 - Elapsed time - 25p to 15a" was not displayed.

62) Duplicate problem: Problem #771837 "PRA47E9 - Elapsed Time - 35-to-20" was not displayed.

63) Duplicate problem: Problem #771838 "PRA47FA - Elapsed Time - 35-to-20" was not displayed.

64) Duplicate problem: Problem #771839 "PRA47FB - Elapsed Time - 35-to-20" was not displayed.

65) Duplicate problem: Problem #771840 "PRA47FC - Elapsed Time - 35-to-20" was not displayed.

66) Duplicate problem: Problem #771841 "PRA47FD - Elapsed Time - 35-to-20" was not displayed.

67) Duplicate problem: Problem #771842 "PRA47FE - Elapsed time - 25p to 15a" was not displayed.

68) Duplicate problem: Problem #771843 "PRA47FF - Elapsed time - 25p to 15a" was not displayed.

69) Duplicate problem: Problem #771844 "PRA47FG - Elapsed time - 25p to 15a" was not displayed.

70) Duplicate problem: Problem #771845 "PRA47FH - Elapsed time - 25p to 15a" was not displayed.

71) Duplicate problem: Problem #771846 "PRA47FJ - Elapsed time - 25p to 15a" was not displayed.

72) Problem #PRA33CK "PRA33CK - Elapsed Time - 45-to-15"

How much time has passed from **7:30 am** to **4:15 pm**?

Multiple choice:

X 8 hours and a half

- From **7:30 am** to **noon** is 4 hours and 30 minutes. In other words, **4 and one half hour**.

From **noon** to **4:15 pm** is 4 hours and fifteen minutes. In other words, **4 and one quarter hour**.

Thus, from 7:30 am to 4:15 pm is

4 + one half + 4 + one quarter = 8 and three quarter hours.

X 8 hours

- From **7:30 am** to **noon** is 4 hours and fifteen minutes. In other words, **4 and one half hours**.

From **noon** to **4:15 pm** is 4 hours and fifteen minutes. In other words, **4 and one quarter hours**.

Thus, from 7:30 am to 4:15 pm is

$4 + \text{one half} + 4 + \text{one quarter} = 8 \text{ and three quarter hours.}$

✗ 7 hours and one quarter hour

• From **7:30 am** to **noon** is 4 hours and fifteen minutes. In other words, **4 and one half hours.**

From **noon** to **4:15 pm** is 4 hours and fifteen minutes. In other words, **4 and one quarter hours.**

Thus, from 7:30 am to 4:15 pm is

$4 + \text{one half} + 4 + \text{one quarter} = 8 \text{ and three quarter hours.}$

✓ 8 hours and three quarters hour

73) Problem #PRA39TJ "PRA39TJ - Elapsed Time - 45-to-20"

How much time has passed from **8:45 am** to **5:15 pm**?

Multiple choice:

✓ 8 hours and a half

✗ 8 hours

• From **8:45 am** to **noon** is 3 hours and fifteen minutes. In other words, **3 and one quarter hours.**

From **noon** to **5:15 pm** is 5 hours and fifteen minutes. In other words, **5 and one quarter hours.**

Thus, from 8:45 am to 5:15 pm is

$3 + \text{one quarter} + 5 + \text{one quarter} = 8 \text{ and a half hours.}$

✘ 7 hours and one quarter hour

- From **8:45 am** to **noon** is 3 hours and fifteen minutes. In other words, **3 and one quarter hours**.

From **noon** to **5:15 pm** is 5 hours and fifteen minutes. In other words, **5 and one quarter hours**.

Thus, from 8:45 am to 5:15 pm is

3 + one quarter + 5 + one quarter = 8 and a half hours.

✘ 8 hours and three quarters hour

- From **8:45 am** to **noon** is 3 hours and fifteen minutes. In other words, **3 and one quarter hours**.

From **noon** to **5:15 pm** is 5 hours and fifteen minutes. In other words, **5 and one quarter hours**.

Thus, from 8:45 am to 5:15 pm is

3 + one quarter + 5 + one quarter = 8 and a half hours.

74) Problem #PRA39T8 "PRA39T8 - Elapsed Time - 30-to-20"

How much time has passed from **7:30 am** to **3:20 pm** ?

Multiple choice:

✔ 7 hours and fifty minutes

✘ 7 hours

- From **7:30 am** to **noon** is **4 hours and thirty minutes**.

From **noon** to **3:20 pm** is 3 hours and twenty minutes.

Thus, from 7:30 am to 3:20 pm is

4 hours + thirty minutes + 3 + twenty minutes = 7 hours and fifty minutes.

✘ 6 hours and twenty minutes

- From **7:30 am** to **noon** is 4 hours and thirty minutes.

From **noon** to **3:20 pm** is 3 hours and twenty minutes.

Thus, from 7:30 am to 3:20 pm is

4 hours + thirty minutes + 3 + twenty minutes = 7 hours and fifty minutes.

✘ 8 hours and fifteen minutes

- From **7:30 am** to **noon** is 4 hours and thirty minutes.

From **noon** to **3:20 pm** is 3 hours and twenty minutes.

Thus, from 7:30 am to 3:20 pm is

4 hours + thirty minutes + 3 + twenty minutes = 7 hours and fifty minutes.

75) Duplicate problem: Problem #771828 "PRA47EY - Elapsed Time - 15-to-20" was not displayed.

76) Problem #PRA4RKG "PRA4RKG - Good Job! You are..."

Good Job! You are done. Press "OK" to finish.

Multiple choice:

✓ OK

Hints:

- The answer is OK.

77) Duplicate problem: Problem #771817 "PRA47EM - Elapsed Time - 30-to-20" was not displayed.

78) Duplicate problem: Problem #771818 "PRA47EN - Elapsed Time - 30-to-20" was not displayed.

79) Duplicate problem: Problem #771819 "PRA47EP - Elapsed Time - 30-to-20" was not displayed.

80) Duplicate problem: Problem #771820 "PRA47EQ - Elapsed Time - 30-to-20" was not displayed.

81) Duplicate problem: Problem #771821 "PRA47ER - Elapsed Time - 30-to-20" was not displayed.

82) Duplicate problem: Problem #771822 "PRA47ES - Elapsed Time - 45-to-20" was not displayed.

83) Duplicate problem: Problem #771823 "PRA47ET - Elapsed Time - 45-to-20" was not displayed.

84) Duplicate problem: Problem #771824 "PRA47EU - Elapsed Time - 45-to-20" was not displayed.

85) Duplicate problem: Problem #771825 "PRA47EV - Elapsed Time - 45-to-20" was not displayed.

86) Duplicate problem: Problem #771826 "PRA47EW - Elapsed Time - 45-to-20" was not displayed.

87) Duplicate problem: Problem #771827 "PRA47EX - Elapsed Time - 15-to-20" was not displayed.

88) Duplicate problem: Problem #771828 "PRA47EY - Elapsed Time - 15-to-20" was not displayed.

89) Duplicate problem: Problem #771829 "PRA47EZ - Elapsed Time - 15-to-20" was not displayed.

90) Duplicate problem: Problem #771830 "PRA47E2 - Elapsed Time - 15-to-20" was not displayed.

91) Duplicate problem: Problem #771831 "PRA47E3 - Elapsed Time - 15-to-20" was not displayed.

92) Duplicate problem: Problem #771832 "PRA47E4 - Elapsed time - 25p to 15a" was not displayed.

93) Duplicate problem: Problem #771833 "PRA47E5 - Elapsed time - 25p to 15a" was not displayed.

94) Duplicate problem: Problem #771834 "PRA47E6 - Elapsed time - 25p to 15a" was not displayed.

95) Duplicate problem: Problem #771835 "PRA47E7 - Elapsed time - 25p to 15a" was not

displayed.

96) Duplicate problem: Problem #771836 "PRA47E8 - Elapsed time - 25p to 15a" was not displayed.

97) Duplicate problem: Problem #771837 "PRA47E9 - Elapsed Time - 35-to-20" was not displayed.

98) Duplicate problem: Problem #771838 "PRA47FA - Elapsed Time - 35-to-20" was not displayed.

99) Duplicate problem: Problem #771839 "PRA47FB - Elapsed Time - 35-to-20" was not displayed.

100) Duplicate problem: Problem #771840 "PRA47FC - Elapsed Time - 35-to-20" was not displayed.

101) Duplicate problem: Problem #771841 "PRA47FD - Elapsed Time - 35-to-20" was not displayed.

102) Duplicate problem: Problem #771842 "PRA47FE - Elapsed time - 25p to 15a" was not displayed.

103) Duplicate problem: Problem #771843 "PRA47FF - Elapsed time - 25p to 15a" was not displayed.

104) Duplicate problem: Problem #771844 "PRA47FG - Elapsed time - 25p to 15a" was not displayed.

105) Duplicate problem: Problem #771845 "PRA47FH - Elapsed time - 25p to 15a" was not displayed.

106) Duplicate problem: Problem #771846 "PRA47FJ - Elapsed time - 25p to 15a" was not displayed.

107) Duplicate problem: Problem #744318 "PRA39TJ - Elapsed Time - 45-to-20" was not displayed.

108) Duplicate problem: Problem #744339 "PRA39T8 - Elapsed Time - 30-to-20" was not displayed.

109) Duplicate problem: Problem #771828 "PRA47EY - Elapsed Time - 15-to-20" was not displayed.

110) Problem #PRA4RKF "PRA4RKF - Good Job! You are..."

Good Job! You are done. Press "OK" to finish.

Multiple choice:

OK

Hints:

- The answer is OK.

111) Duplicate problem: Problem #771817 "PRA47EM - Elapsed Time - 30-to-20" was not displayed.

112) Duplicate problem: Problem #771818 "PRA47EN - Elapsed Time - 30-to-20" was not displayed.

113) Duplicate problem: Problem #771819 "PRA47EP - Elapsed Time - 30-to-20" was not

displayed.

114) Duplicate problem: Problem #771820 "PRA47EQ - Elapsed Time - 30-to-20" was not displayed.

115) Duplicate problem: Problem #771821 "PRA47ER - Elapsed Time - 30-to-20" was not displayed.

116) Duplicate problem: Problem #771822 "PRA47ES - Elapsed Time - 45-to-20" was not displayed.

117) Duplicate problem: Problem #771823 "PRA47ET - Elapsed Time - 45-to-20" was not displayed.

118) Duplicate problem: Problem #771824 "PRA47EU - Elapsed Time - 45-to-20" was not displayed.

119) Duplicate problem: Problem #771825 "PRA47EV - Elapsed Time - 45-to-20" was not displayed.

120) Duplicate problem: Problem #771826 "PRA47EW - Elapsed Time - 45-to-20" was not displayed.

121) Duplicate problem: Problem #771827 "PRA47EX - Elapsed Time - 15-to-20" was not displayed.

122) Duplicate problem: Problem #771828 "PRA47EY - Elapsed Time - 15-to-20" was not displayed.

123) Duplicate problem: Problem #771829 "PRA47EZ - Elapsed Time - 15-to-20" was not displayed.

124) Duplicate problem: Problem #771830 "PRA47E2 - Elapsed Time - 15-to-20" was not displayed.

125) Duplicate problem: Problem #771831 "PRA47E3 - Elapsed Time - 15-to-20" was not displayed.

126) Duplicate problem: Problem #771832 "PRA47E4 - Elapsed time - 25p to 15a" was not displayed.

127) Duplicate problem: Problem #771833 "PRA47E5 - Elapsed time - 25p to 15a" was not displayed.

128) Duplicate problem: Problem #771834 "PRA47E6 - Elapsed time - 25p to 15a" was not displayed.

129) Duplicate problem: Problem #771835 "PRA47E7 - Elapsed time - 25p to 15a" was not displayed.

130) Duplicate problem: Problem #771836 "PRA47E8 - Elapsed time - 25p to 15a" was not displayed.

131) Duplicate problem: Problem #771837 "PRA47E9 - Elapsed Time - 35-to-20" was not displayed.

132) Duplicate problem: Problem #771838 "PRA47FA - Elapsed Time - 35-to-20" was not displayed.

133) Duplicate problem: Problem #771839 "PRA47FB - Elapsed Time - 35-to-20" was not displayed.

134) Duplicate problem: Problem #771840 "PRA47FC - Elapsed Time - 35-to-20" was not displayed.

135) Duplicate problem: Problem #771841 "PRA47FD - Elapsed Time - 35-to-20" was not displayed.

136) Duplicate problem: Problem #771842 "PRA47FE - Elapsed time - 25p to 15a" was not displayed.

137) Duplicate problem: Problem #771843 "PRA47FF - Elapsed time - 25p to 15a" was not displayed.

138) Duplicate problem: Problem #771844 "PRA47FG - Elapsed time - 25p to 15a" was not displayed.

139) Duplicate problem: Problem #771845 "PRA47FH - Elapsed time - 25p to 15a" was not displayed.

140) Duplicate problem: Problem #771846 "PRA47FJ - Elapsed time - 25p to 15a" was not displayed.

141) Duplicate problem: Problem #744318 "PRA39TJ - Elapsed Time - 45-to-20" was not displayed.

142) Duplicate problem: Problem #738119 "PRA33CK - Elapsed Time - 45-to-15" was not displayed.

143) Problem #PRA36N8 "PRA36N8 - Elapsed time - 15p to 20a"

How much time has passed from **7:15 pm** to **5:20 am** of the next day?

Multiple choice:

9 hours and five minutes

9 hours

- From **7:15 pm** to **midnight** is **4 hours and forty five minutes**.

From **midnight** to **5:20 am** is **5 hours and twenty minutes**.

Thus, from 7:15 pm to 5:20 am of the next day is

4 hours + forty five minutes + 5 + twenty minutes = 9 hours and sixty five minutes

= 10 hours and five minutes.

8 hours and twenty minutes

- From **7:15 pm** to **midnight** is **4 hours and forty five minutes**.

From **midnight** to **5:20 am** is **5 hours and twenty minutes**.

Thus, from 7:15 pm to 5:20 am of the next day is

4 hours + forty five minutes.+ **5 + twenty minutes** = **9 hours and sixty five minutes**

= **10 hours and five minutes**.

x 10 hours and twenty five minutes

- From **7:15 pm** to **midnight** is **4 hours and forty five minutes**.

From **midnight** to **5:20 am** is **5 hours and twenty minutes**.

Thus, from 7:15 pm to 5:20 am of the next day is

4 hours + forty five minutes.+ **5 + twenty minutes** = **9 hours and sixty five minutes**

= **10 hours and five minutes**.

144)Duplicate problem: Problem #744339 "PRA39T8 - Elapsed Time - 30-to-20" was not displayed.

145) Problem #PRA4J4R "PRA4J4R - Elapsed Time - 35-to-20"

How much time has passed from **8:35 am** to **4:20 pm**?

Multiple choice:

7 hours and three quarters hour

7 hours

- From **8:35 am** to **noon** is **3 hours and twenty five minutes**.

From **noon** to **4:20 pm** is **4 hours and twenty minutes**.

Thus, from 8:35 am to 4:20 pm is

3 hours + twenty five minutes + 4 + twenty minutes = 7 hours and forty five minutes.

6 hours and twenty minutes

- From **8:35 am** to **noon** is **3 hours and twenty five minutes**.

From **noon** to **4:20 pm** is **4 hours and twenty minutes**.

Thus, from 8:35 am to 4:20 pm is

3 hours + twenty five minutes + 4 + twenty minutes = 7 hours and forty five minutes.

8 hours and fifteen minutes

- From **8:35 am** to **noon** is **3 hours and twenty five minutes**.

From **noon** to **4:20 pm** is **4 hours and twenty minutes**.

Thus, from 8:35 am to 4:20 pm is

3 hours + twenty five minutes + 4 + twenty minutes = 7 hours and forty five minutes.

146) Problem #PRA4J43 "PRA4J43 - Elapsed Time - 15-to-20"

How much time has passed from 7:15 am to 4:20 pm ?

Multiple choice:

✓ 9 hours and five minutes

✗ 8 hours

- From 7:15 am to noon is 4 hours and forty five minutes.

From noon to 4:20 pm is 4 hours and twenty minutes.

Thus, from 7:15 am to 4:20 pm is

4 hours + forty five minutes + 4 + twenty minutes = 8 hours and sixty five minutes.

= 9 hours and five minutes.

✗ 7 hours and twenty minutes

- From 7:15 am to noon is 4 hours and forty five minutes.

From noon to 4:20 pm is 4 hours and twenty minutes.

Thus, from 7:15 am to 4:20 pm is

4 hours + forty five minutes + 4 + twenty minutes = 8 hours and sixty five minutes.

= **9 hours and five minutes.**

✗ 9 hours and fifteen minutes

- From **7:15 am** to **noon** is **4 hours and forty five minutes.**

From **noon** to **4:20 pm** is **4 hours and twenty minutes.**

Thus, from 7:15 am to 4:20 pm is

4 hours + forty five minutes. + **4 + twenty minutes** = **8 hours and sixty five minutes.**

= **9 hours and five minutes.**

147) Problem #PRA4J5D "PRA4J5D - Elapsed Time - 15-to-20"

How much time has passed from **10:15 am** to **5:20 pm** ?

Multiple choice:

✓ 7 hours and five minutes

✗ 6 hours

- From **10:15 am** to **noon** is **1 hours and forty five minutes.**

From **noon** to **5:20 pm** is **5 hours and twenty minutes.**

Thus, from 10:15 am to 5:20 pm is

1 hours + forty five minutes. + **5 + twenty minutes** = **6 hours and sixty five minutes.**

= **7 hours and five minutes.**

✗ 5 hours and twenty minutes

- From **10:15 am** to **noon** is **1 hours and forty five minutes**.

From **noon** to **5:20 pm** is **5 hours and twenty minutes**.

Thus, from 10:15 am to 5:20 pm is

1 hours + forty five minutes.+ **5 + twenty minutes** = **6 hours and sixty five minutes**.

= **7 hours and five minutes**.

✗ 7 hours and fifteen minutes

- From **10:15 am** to **noon** is **1 hours and forty five minutes**.

From **noon** to **5:20 pm** is **5 hours and twenty minutes**.

Thus, from 10:15 am to 5:20 pm is

1 hours + forty five minutes.+ **5 + twenty minutes** = **6 hours and sixty five minutes**.

= **7 hours and five minutes**.

148) Problem #PRA4J5U "PRA4J5U - Elapsed time - 25p to 15a"

How much time has passed from **8:25 pm** to **1:15 am** of the next day?

Multiple choice:

✓ 4 hours and fifty minutes

✗ 4 hours

- From **8:25 pm** to **midnight** is **3 hours and thirty five minutes**.

From **midnight** to **1:15 am** is 1 hours and fifteen minutes.

Thus, from 8:25 pm to 1:15 am of the next day is

3 hours + thirty five minutes. + 1 + fifteen minutes = 4 hours and fifty minutes.

✘ 3 hours and twenty minutes

- From **8:25 pm** to **midnight** is 3 hours and thirty five minutes.

From **midnight** to **1:15 am** is 1 hours and fifteen minutes.

Thus, from 8:25 pm to 1:15 am of the next day is

3 hours + thirty five minutes. + 1 + fifteen minutes = 4 hours and fifty minutes.

✘ 5 hours and twenty five minutes

- From **8:25 pm** to **midnight** is 3 hours and thirty five minutes.

From **midnight** to **1:15 am** is 1 hours and fifteen minutes.

Thus, from 8:25 pm to 1:15 am of the next day is

3 hours + thirty five minutes. + 1 + fifteen minutes = 4 hours and fifty minutes.

149) Duplicate problem: Problem #771817 "PRA47EM - Elapsed Time - 30-to-20" was not displayed.

150) Duplicate problem: Problem #771818 "PRA47EN - Elapsed Time - 30-to-20" was not displayed.

151) Duplicate problem: Problem #771819 "PRA47EP - Elapsed Time - 30-to-20" was not displayed.

152) Duplicate problem: Problem #771820 "PRA47EQ - Elapsed Time - 30-to-20" was not displayed.

153) Duplicate problem: Problem #771821 "PRA47ER - Elapsed Time - 30-to-20" was not displayed.

154) Duplicate problem: Problem #771822 "PRA47ES - Elapsed Time - 45-to-20" was not displayed.

155) Duplicate problem: Problem #771823 "PRA47ET - Elapsed Time - 45-to-20" was not displayed.

156) Duplicate problem: Problem #771824 "PRA47EU - Elapsed Time - 45-to-20" was not displayed.

157) Duplicate problem: Problem #771825 "PRA47EV - Elapsed Time - 45-to-20" was not displayed.

158) Duplicate problem: Problem #771826 "PRA47EW - Elapsed Time - 45-to-20" was not displayed.

159) Duplicate problem: Problem #771827 "PRA47EX - Elapsed Time - 15-to-20" was not displayed.

160) Duplicate problem: Problem #771828 "PRA47EY - Elapsed Time - 15-to-20" was not displayed.

161) Duplicate problem: Problem #771829 "PRA47EZ - Elapsed Time - 15-to-20" was not displayed.

162) Duplicate problem: Problem #771830 "PRA47E2 - Elapsed Time - 15-to-20" was not displayed.

163) Duplicate problem: Problem #771831 "PRA47E3 - Elapsed Time - 15-to-20" was not displayed.

164) Duplicate problem: Problem #771832 "PRA47E4 - Elapsed time - 25p to 15a" was not displayed.

165) Duplicate problem: Problem #771833 "PRA47E5 - Elapsed time - 25p to 15a" was not displayed.

166) Duplicate problem: Problem #771834 "PRA47E6 - Elapsed time - 25p to 15a" was not displayed.

167) Duplicate problem: Problem #771835 "PRA47E7 - Elapsed time - 25p to 15a" was not displayed.

168) Duplicate problem: Problem #771836 "PRA47E8 - Elapsed time - 25p to 15a" was not displayed.

169) Duplicate problem: Problem #771837 "PRA47E9 - Elapsed Time - 35-to-20" was not displayed.

170) Duplicate problem: Problem #771838 "PRA47FA - Elapsed Time - 35-to-20" was not displayed.

171) Duplicate problem: Problem #771839 "PRA47FB - Elapsed Time - 35-to-20" was not displayed.

172) Duplicate problem: Problem #771840 "PRA47FC - Elapsed Time - 35-to-20" was not

displayed.

173) Duplicate problem: Problem #771841 "PRA47FD - Elapsed Time - 35-to-20" was not displayed.

174) Duplicate problem: Problem #771842 "PRA47FE - Elapsed time - 25p to 15a" was not displayed.

175) Duplicate problem: Problem #771843 "PRA47FF - Elapsed time - 25p to 15a" was not displayed.

176) Duplicate problem: Problem #771844 "PRA47FG - Elapsed time - 25p to 15a" was not displayed.

177) Duplicate problem: Problem #771845 "PRA47FH - Elapsed time - 25p to 15a" was not displayed.

178) Duplicate problem: Problem #771846 "PRA47FJ - Elapsed time - 25p to 15a" was not displayed.

179) Problem #PRA46QW "PRA46QW - Evaluation"

A) [Congratulation, you achieved 3 right in a row! This problem set is almost done.](#)

[We want to ask you two questions about how you feel then there will be two harder elapsed time questions.](#)

Did you enjoy these problems?

Multiple choice:

- I enjoyed these problem a lot
- I enjoyed them some
- I did not enjoy them

B) 2. Did you learn much from these problems?

Multiple choice:

- I think I learned a lot.
- I think I learn some.
- I am not sure if I learned.

180) Problem #PRA46Q2 "PRA46Q2 - Elapsed Time Advance 2"

When Travis last checked the clock it was 6:12 pm.

It is now 10:42 pm.

How much time has elapsed?

Answer: __:__ __ (hours:minutes)

Fill in:

✓ 4:30

Hints:

- The problem wants you to count up from the first time to the second time. To keep the minutes and the hours separate, do it in 3 steps.

1. From 6:12 pm to 7:00 pm, there are 48 minutes.
2. From 7:00 pm to 10:00 pm, there are 3 hours.
3. And from 10:00 pm to 10:42 pm, there are 42 minutes.

- To find the total elapsed time, add the minutes from the beginning and the end together. $48 \text{ minutes} + 42 \text{ minutes} = 90 \text{ minutes}$.

Remember, there are 60 minutes in 1 hour. Convert the minutes to minutes and hours.
 $90 = 60 + 30 = 1 \text{ hour and } 30 \text{ minutes}$.

- The elapsed time is:
 $1 \text{ hour} + 3 \text{ hours} = 4 \text{ hours}$
and 30 minutes.

Type 4:30

181) Problem #PRAH58Q "PRAH58Q - Elapsed Time 3"

When Cindy last checked the clock it was 5:39 pm.
It is now 8:17 pm.
How much time has elapsed?

Answer: __:__ __ (hours:minutes)

Fill in:

✓ 2:38

Hints:

- The problem wants you to count up from the first time to the second time. Remember to keep the minutes and the hours separate.

Start by finding the elapsed minutes from 5:39 pm to 6:00 pm.
Here, there are 21 minutes.

- Now count up the hours.
From 6:00 pm to 8:00 pm, there are 2 hours.

- Finally, add the minutes from 8:00pm to 8:17 pm.

In this case, there are 17 minutes.

In total, there are $21 + 17$, or 38 minutes.
The elapsed time is 2 hours and 38 minutes.
Type 2:38

7.1.3. Story Problems

Problem Set "SKILL BUILDER Coin Values 2.MD.C.8 EX" id:[PSASA4B]

Select All

1) Problem #PRA4ZB7 "PRA4ZB7 - This is a skill b..."

This is a skill builder.

You will work until you get three right in a row.

I am ready to work until I get three right in a row.

2) Problem #PRA4GTT "PRA4GTT - Money Count - Leftover"

Ryan has 14 nickels. He used the money to buy a Pokemon trade card. The card cost 61 pennies. How many cents does he have left?

3) Problem #PRA4GTW "PRA4GTW - Money Count - Leftover"

Ryan has 8 nickels. He used the money to buy a Pokemon trade card. The card cost 39 pennies. How many cents does he have left?

4) Problem #PRA4J3C "PRA4J3C - Money Count Dollar"

Lee has 1 dollar(s). Coleman has 4 quarter(s). How many cents do they have in total?

5) Problem #PRA4J2W "PRA4J2W - Money Count - Leftover"

Ryan has 5 quarters. He used the money to buy a balloon. The balloon cost 80 pennies. How many cents does he have left?

6) Problem #PRA4J3V "PRA4J3V - Money Count"

Alex has 2 quarter(s). Lee has 24 pennies. How many cents do they have in total?

-

7) Problem #PRA4J2Y "PRA4J2Y - Money Count - Leftover"

Ryan has 3 quarters. He used the money to buy a balloon. The balloon cost 26 pennies. How many cents does he have left?

8) Problem #PRA4J3E "PRA4J3E - Money Count Dollar"

Lee has 3 dollar(s). Coleman has 4 quarter(s). How many cents do they have in total?

-

9) Problem #PRA4J4D "PRA4J4D - Money Count - Leftover"

Ryan has 8 dimes. He used the money to buy a Pokemon trade card. The card cost 60 pennies. How many cents does he have left?

10) Problem #PRA4J3G "PRA4J3G - Money Count Dollar"

Lee has 1 dollar(s). Coleman has 3 quarter(s). How many cents do they have in total?

-

11) Problem #PRA4J2D "PRA4J2D - Money Count - Leftover"

Ryan has 15 nickels. He used the money to buy a Pokemon trade card. The card cost 34 pennies. How many cents does he have left?

12) Problem #PRA4J3T "PRA4J3T - Money Count"

Adam has 3 quarter(s). Lee has 3 pennies. How many cents do they have in total?

-

13) Problem #PRA4J39 "PRA4J39 - Money Count - Leftover"

Ryan has 7 dimes. He used the money to buy a Pokemon trade card. The card cost 32 pennies. How many cents does he have left?

14) Problem #PRA4J37 "PRA4J37 - Money Count"

Edson has 3 quarter(s). Aiden has 25 pennies. How many cents do they have in total?

-

15) Problem #PRA4GT2 "PRA4GT2 - Money Count - Leftover"

Ryan has 20 nickels. He used the money to buy a Pokemon trade card. The card cost 31 pennies. How many cents does he have left?

16) Problem #PRA4J24 "PRA4J24 - Money Count - Leftover"

Ryan has 4 quarters. He used the money to buy a balloon. The balloon cost 25 pennies. How many cents does he have left?

17) Problem #PRA4NH9 "PRA4NH9 - Money Count Dollar"

Lee has 2 dollar(s). Coleman has 3 quarter(s). How many cents do they have in total?

-

18) Problem #PRA4J4F "PRA4J4F - Money Count - Leftover"

Ryan has 4 dimes. He used the money to buy a Pokemon trade card. The card cost 13 pennies. How many cents does he have left?

19) Problem #PRA4J22 "PRA4J22 - Money Count - Leftover"

Ryan has 5 quarters. He used the money to buy a balloon. The balloon cost 123 pennies. How many cents does he have left?

20) Problem #PRA4NJN "PRA4NJN - Money Count"

Alex has 3 quarter(s). Nathan has 13 pennies. How many cents do they have in total?

-

21) Problem #PRA4GT4 "PRA4GT4 - Money Count - Leftover"

Ryan has 11 nickels. He used the money to buy a Pokemon trade card. The card cost 20 pennies. How many cents does he have left?

22) Problem #PRA4J4H "PRA4J4H - Money Count - Leftover"

Ryan has 4 dimes. He used the money to buy a Pokemon trade card. The card cost 14 pennies. How many cents does he have left?

23) Problem #PRA4J3J "PRA4J3J - Money Count Dollar"

Lee has 2 dollar(s). Coleman has 4 quarter(s). How many cents do they have in total?

-

24) Problem #PRA4J3A "PRA4J3A - Money Count - Leftover"

Ryan has 3 quarters. He used the money to buy a balloon. The balloon cost 35 pennies. How many cents does he have left?

25) Problem #PRA4J4N "PRA4J4N - Money Count - Leftover"

Ryan has 6 dimes. He used the money to buy a Pokemon trade card. The card cost 34 pennies. How many cents does he have left?

26) Problem #PRA4J3R "PRA4J3R - Money Count Dollar"

Lee has 1 dollar(s). Coleman has 1 quarter(s). How many cents do they have in total?

-

27) Problem #PRA4GTY "PRA4GTY - Money Count - Leftover"

Ryan has 18 nickels. He used the money to buy a Pokemon trade card. The card cost 25 pennies. How many cents does he have left?

28) Problem #PRA4NHQ "PRA4NHQ - Money Count - Leftover"

Ryan has 4 quarters. He used the money to buy a balloon. The balloon cost 82 pennies. How many cents does he have left?

29) Problem #PRA4J3Z "PRA4J3Z - Money Count"

Daniel has 2 quarter(s). Ollie has 23 pennies. How many cents do they have in total?

-

30) Problem #PRA4J28 "PRA4J28 - Money Count - Leftover"

Ryan has 2 quarters. He used the money to buy a balloon. The balloon cost 38 pennies. How many cents does he have left?

31) Problem #PRA4J3P "PRA4J3P - Money Count Dollar"

Lee has 1 dollar(s). Coleman has 5 quarter(s). How many cents do they have in total?

-

32) Problem #PRA4J4B "PRA4J4B - Money Count - Leftover"

Ryan has 5 dimes. He used the money to buy a Pokemon trade card. The card cost 38 pennies. How many cents does he have left?

33) Problem #PRA4J3X "PRA4J3X - Money Count"

David has 3 quarter(s). Ollie has 11 pennies. How many cents do they have in total?

-

34) Problem #PRA4NJ2 "PRA4NJ2 - Money Count - Leftover"

Ryan has 3 dimes. He used the money to buy a Pokemon trade card. The card cost 28 pennies. How many cents does he have left?

35) Problem #PRA4J26 "PRA4J26 - Money Count - Leftover"

Ryan has 3 quarters. He used the money to buy a balloon. The balloon cost 35 pennies. How many cents does he have left?

36) Problem #PRA4J33 "PRA4J33 - Money Count"

Edson has 3 quarter(s). Aiden has 9 pennies. How many cents do they have in total?

-

37) Problem #PRA4J4K "PRA4J4K - Money Count - Leftover"

Ryan has 3 dimes. He used the money to buy a Pokemon trade card. The card cost 23 pennies. How many cents does he have left?

38) Problem #PRA4J3M "PRA4J3M - Money Count Dollar"

Lee has 3 dollar(s). Coleman has 4 quarter(s). How many cents do they have in total?

-

39) Problem #PRA4NG7 "PRA4NG7 - Money Count - Leftover"

Ryan has 12 nickels. He used the money to buy a Pokemon trade card. The card cost 28 pennies. How many cents does he have left?

40) Problem #PRA4GT6 "PRA4GT6 - Money Count - Leftover"

Ryan has 16 nickels. He used the money to buy a Pokemon trade card. The card cost 16 pennies. How many cents does he have left?

41) Problem #PRA4J35 "PRA4J35 - Money Count"

Edson has 2 quarter(s). Ollie has 19 pennies. How many cents do they have in total?

-

42) Problem #PRA4GTS "PRA4GTS - Conditional Question"

Ryan has 14 nickels. He used the money to buy a Pokemon trade card. The card cost 61 pennies. How many cents does he have left?

43) Problem #PRA4GTV "PRA4GTV - Money Count - Leftover"

Ryan has 8 nickels. He used the money to buy a Pokemon trade card. The card cost 39 pennies. How many cents does he have left?

44) Problem #PRA4J3B "PRA4J3B - Money Count Dollar"

Lee has 1 dollar(s). Coleman has 4 quarter(s). How many cents do they have in total?

-

45) Problem #PRA4J2V "PRA4J2V - Money Count - Leftover"

Ryan has 5 quarters. He used the money to buy a balloon. The balloon cost 80 pennies. How many cents does he have left?

46) Problem #PRA4J3U "PRA4J3U - Money Count"

Alex has 2 quarter(s). Lee has 24 pennies. How many cents do they have in total?

-

47) Problem #PRA4J2X "PRA4J2X - Money Count - Leftover"

Ryan has 3 quarters. He used the money to buy a balloon. The balloon cost 26 pennies. How many cents does he have left?

48) Problem #PRA4J3D "PRA4J3D - Money Count Dollar"

Lee has 3 dollar(s). Coleman has 4 quarter(s). How many cents do they have in total?

-

49) Problem #PRA4J4C "PRA4J4C - Money Count - Leftover"

Ryan has 8 dimes. He used the money to buy a Pokemon trade card. The card cost 60 pennies. How many cents does he have left?

50) Problem #PRA4J3F "PRA4J3F - Money Count Dollar"

Lee has 1 dollar(s). Coleman has 3 quarter(s). How many cents do they have in total?

-

51) Problem #PRA4J2C "PRA4J2C - Money Count - Leftover"

Ryan has 15 nickels. He used the money to buy a Pokemon trade card. The card cost 34 pennies. How many cents does he have left?

52) Problem #PRA4J3S "PRA4J3S - Money Count"

Adam has 3 quarter(s). Lee has 3 pennies. How many cents do they have in total?

-

53) Problem #PRA4J38 "PRA4J38 - Money Count - Leftover"

Ryan has 7 dimes. He used the money to buy a Pokemon trade card. The card cost 32 pennies. How many cents does he have left?

54) Problem #PRA4J3Q "PRA4J3Q - Money Count Dollar"

Lee has 1 dollar(s). Coleman has 1 quarter(s). How many cents do they have in total?

-

55) Problem #PRA4J4G "PRA4J4G - Money Count - Leftover"

Ryan has 4 dimes. He used the money to buy a Pokemon trade card. The card cost 14 pennies. How many cents does he have left?

56) Problem #PRA4J3W "PRA4J3W - Money Count"

David has 3 quarter(s). Ollie has 11 pennies. How many cents do they have in total?

-

57) Problem #PRA4J3H "PRA4J3H - Money Count Dollar"

Lee has 2 dollar(s). Coleman has 4 quarter(s). How many cents do they have in total?

-

58) Problem #PRA4J29 "PRA4J29 - Money Count - Leftover"

Ryan has 3 quarters. He used the money to buy a balloon. The balloon cost 35 pennies. How many cents does he have left?

59) Problem #PRA4GT5 "PRA4GT5 - Money Count - Leftover"

Ryan has 16 nickels. He used the money to buy a Pokemon trade card. The card cost 16 pennies. How many cents does he have left?

60) Problem #PRA4NJP "PRA4NJP - Money Count"

Alex has 3 quarter(s). Nathan has 13 pennies. How many cents do they have in total?

-

61) Problem #PRA4J23 "PRA4J23 - Money Count - Leftover"

Ryan has 4 quarters. He used the money to buy a balloon. The balloon cost 25 pennies. How many cents does he have left?

62) Problem #PRA4NHH "PRA4NHH - Money Count - Leftover"

Ryan has 12 nickels. He used the money to buy a Pokemon trade card. The card cost 28 pennies. How many cents does he have left?

63) Problem #PRA4NJA "PRA4NJA - Money Count Dollar"

Lee has 2 dollar(s). Coleman has 3 quarter(s). How many cents do they have in total?

-

64) Problem #PRA4NJ3 "PRA4NJ3 - Money Count - Leftover"

Ryan has 3 dimes. He used the money to buy a Pokemon trade card. The card cost 28 pennies. How many cents does he have left?

65) Problem #PRA4GTZ "PRA4GTZ - Money Count - Leftover"

Ryan has 20 nickels. He used the money to buy a Pokemon trade card. The card cost 31 pennies. How many cents does he have left?

66) Problem #PRA4J3Y "PRA4J3Y - Money Count"

Daniel has 2 quarter(s). Ollie has 23 pennies. How many cents do they have in total?

-

67) Problem #PRA4GTX "PRA4GTX - Money Count - Leftover"

Ryan has 18 nickels. He used the money to buy a Pokemon trade card. The card cost 25 pennies. How many cents does he have left?

68) Problem #PRA4J4E "PRA4J4E - Money Count - Leftover"

Ryan has 4 dimes. He used the money to buy a Pokemon trade card. The card cost 13 pennies. How many cents does he have left?

69) Problem #PRA4J3K "PRA4J3K - Money Count Dollar"

Lee has 3 dollar(s). Coleman has 4 quarter(s). How many cents do they have in total?

-

70) Problem #PRA4J32 "PRA4J32 - Money Count"

Edson has 3 quarter(s). Aiden has 9 pennies. How many cents do they have in total?

-

71) Problem #PRA4NHW "PRA4NHW - Money Count - Leftover"

Ryan has 4 quarters. He used the money to buy a balloon. The balloon cost 82 pennies. How many cents does he have left?

72) Problem #PRA4J25 "PRA4J25 - Money Count - Leftover"

Ryan has 3 quarters. He used the money to buy a balloon. The balloon cost 35 pennies. How many cents does he have left?

73) Problem #PRA4J36 "PRA4J36 - Money Count"

Edson has 3 quarter(s). Aiden has 25 pennies. How many cents do they have in total?

-

74) Problem #PRA4J34 "PRA4J34 - Money Count"

Edson has 2 quarter(s). Ollie has 19 pennies. How many cents do they have in total?

-

75) Problem #PRA4J4M "PRA4J4M - Money Count - Leftover"

Ryan has 6 dimes. He used the money to buy a Pokemon trade card. The card cost 34 pennies. How many cents does he have left?

76) Problem #PRA4J2Z "PRA4J2Z - Money Count - Leftover"

Ryan has 5 quarters. He used the money to buy a balloon. The balloon cost 123 pennies. How many cents does he have left?

77) Problem #PRA4J4J "PRA4J4J - Money Count - Leftover"

Ryan has 3 dimes. He used the money to buy a Pokemon trade card. The card cost 23 pennies. How many cents does he have left?

78) Problem #PRA4J27 "PRA4J27 - Money Count - Leftover"

Ryan has 2 quarters. He used the money to buy a balloon. The balloon cost 38 pennies. How many cents does he have left?

79) Problem #PRA4J4A "PRA4J4A - Money Count - Leftover"

Ryan has 5 dimes. He used the money to buy a Pokemon trade card. The card cost 38 pennies. How many cents does he have left?

80) Problem #PRA4J3N "PRA4J3N - Money Count Dollar"

Lee has 1 dollar(s). Coleman has 5 quarter(s). How many cents do they have in total?

-

81) Problem #PRA4NKZ "PRA4NKZ - Money Count - Leftover"

Ryan has 11 nickels. He used the money to buy a Pokemon trade card. The card cost 20 pennies. How many cents does he have left?

82) Problem #PRA4QZH "PRA4QZH - Sorry you got the..."

You got that questions wrong.

Practice some **easier problems** until you get three right in a row.

Then you can get back to working towards three right in a row for the **harder problems**.

OK

83) Problem #PRA3GR4 "PRA3GR4 - Recognize coin - Quarter"

What is a **quarter** worth?

- 1 cent
- 5 cents
- 10 cents
- 25 cents

84) Problem #PRA3GR5 "PRA3GR5 - Recognize coin - Dime"

What is a **Dime** worth?

- 1 cent
- 5 cents
- 10 cents
- 25 cents

85) Problem #PRA3GB9 "PRA3GB9 - Recognize coin - Nickel"

How much does a **Nickel** worth?

- 1 cent
- 5 cents
- 10 cents
- 25 cents

86) Problem #PRA3GR6 "PRA3GR6 - Recognize coin - Penny"

How much does a **Penny** worth?

- 1 cent
 - 5 cents
 - 10 cents
 - 25 cents
-

87) Problem #PRA4MTF "PRA4MTF - Recognize coin - Quarter"

What is a **quarter** worth?

- 1 cent
 - 5 cents
 - 10 cents
 - 25 cents
-

88) Problem #PRA4MTJ "PRA4MTJ - Recognize coin - Dime"

What is a **Dime** worth?

- 1 cent
 - 5 cents
 - 10 cents
 - 25 cents
-

89) Problem #PRA4MTY "PRA4MTY - Recognize coin - Nickel"

How much does a **Nickel** worth?

- 1 cent
 - 5 cents
 - 10 cents
 - 25 cents
-

90) Problem #PRA4MTT "PRA4MTT - Recognize coin - Penny"

How much does a **Penny** worth?

- 1 cent
 - 5 cents
 - 10 cents
 - 25 cents
-

91) Problem #PRA4MTG "PRA4MTG - Recognize coin - Quarter"

What is a **quarter** worth?

- 1 cent
- 5 cents
- 10 cents

25 cents

92) Problem #PRA4MTK "PRA4MTK - Recognize coin - Dime"

What is a **Dime** worth?

1 cent

5 cents

10 cents

25 cents

93) Problem #PRA4MTZ "PRA4MTZ - Recognize coin - Nickel"

How much does a **Nickel** worth?

1 cent

5 cents

10 cents

25 cents

94) Problem #PRA4MTU "PRA4MTU - Recognize coin - Penny"

How much does a **Penny** worth?

1 cent

5 cents

10 cents

25 cents

95) Problem #PRA4MTH "PRA4MTH - Recognize coin - Quarter"

What is a **quarter** worth?

1 cent

5 cents

10 cents

25 cents

96) Problem #PRA4MTM "PRA4MTM - Recognize coin - Dime"

What is a **Dime** worth?

- 1 cent
 - 5 cents
 - 10 cents
 - 25 cents
-

97) Problem #PRA4MT2 "PRA4MT2 - Recognize coin - Nickel"

How much does a **Nickel** worth?

- 1 cent
 - 5 cents
 - 10 cents
 - 25 cents
-

98) Problem #PRA4MTV "PRA4MTV - Recognize coin - Penny"

How much does a **Penny** worth?

- 1 cent
 - 5 cents
 - 10 cents
 - 25 cents
-

99) Problem #PRA4MTX "PRA4MTX - Recognize coin - Quarter"

What is a **quarter** worth?

- 1 cent
 - 5 cents
 - 10 cents
 - 25 cents
-

100) Problem #PRA4MTN "PRA4MTN - Recognize coin - Dime"

What is a **Dime** worth?

- 1 cent
- 5 cents
- 10 cents
- 25 cents

101) Problem #PRA4MT3 "PRA4MT3 - Recognize coin - Nickel"

How much does a **Nickel** worth?

- 1 cent
- 5 cents
- 10 cents
- 25 cents

102) Problem #PRA4MTW "PRA4MTW - Recognize coin - Penny"

How much does a **Penny** worth?

- 1 cent
- 5 cents
- 10 cents
- 25 cents

103) Problem #PRA3GRY "PRA3GRY - What is it called? - Quarter"

What is this coin called?



- Penny
- Nickel
- Dime
- Quarter

104) Problem #PRA3GR3 "PRA3GR3 - What is it called? - Dime"

What is this coin called?



- Penny
- Nickel
- Dime
- Quarter

105) Problem #PRA3GRZ "PRA3GRZ - What is it called? - Nickel"

What is this coin called?



- Penny
- Nickel
- Dime
- Quarter

106) Problem #PRA3GR2 "PRA3GR2 - What is it called? - Penny"

What is this coin called?



- Penny
- Nickel
- Dime
- Quarter

107) Problem #PRA4MT5 "PRA4MT5 - What is it called? - Quarter"

What is this coin called?



- Penny
- Nickel
- Dime
- Quarter

108) Problem #PRA4MT9 "PRA4MT9 - What is it called? - Dime"

What is this coin called?



- Penny
- Nickel
- Dime
- Quarter

109) Problem #PRA4MUD "PRA4MUD - What is it called? - Nickel"

What is this coin called?



- Penny
- Nickel
- Dime
- Quarter

110) Problem #PRA4MUH "PRA4MUH - What is it called? - Penny"

What is this coin called?



- Penny
- Nickel
- Dime
- Quarter

111) Problem #PRA4MT6 "PRA4MT6 - What is it called? - Quarter"

What is this coin called?



- Penny
- Nickel
- Dime
- Quarter

112) Problem #PRA4MUA "PRA4MUA - What is it called? - Dime"

What is this coin called?



- Penny
- Nickel
- Dime

Quarter

113) Problem #PRA4MUE "PRA4MUE - What is it called? - Nickel"

What is this coin called?



Penny

Nickel

Dime

Quarter

114) Problem #PRA4MUJ "PRA4MUJ - What is it called? - Penny"

What is this coin called?



Penny

Nickel

Dime

Quarter

115) Problem #PRA4MT7 "PRA4MT7 - What is it called? - Quarter"

What is this coin called?



- Penny
- Nickel
- Dime
- Quarter

116) Problem #PRA4MUB "PRA4MUB - What is it called? - Dime"

What is this coin called?



- Penny
- Nickel
- Dime
- Quarter

117) Problem #PRA4MUF "PRA4MUF - What is it called? - Nickel"

What is this coin called?



- Penny
- Nickel
- Dime
- Quarter

118) Problem #PRA4MUK "PRA4MUK - What is it called? - Penny"

What is this coin called?



- Penny
- Nickel
- Dime
- Quarter

119) Problem #PRA4MT8 "PRA4MT8 - What is it called? - Quarter"

What is this coin called?



- Penny
- Nickel
- Dime
- Quarter

120) Problem #PRA4MUC "PRA4MUC - What is it called? - Dime"

What is this coin called?



- Penny
- Nickel
- Dime
- Quarter

121) Problem #PRA4MUG "PRA4MUG - What is it called? - Nickel"

What is this coin called?



- Penny
- Nickel
- Dime
- Quarter

122) Problem #PRA4MUM "PRA4MUM - What is it called? - Penny"

What is this coin called?



- Penny
- Nickel
- Dime
- Quarter

123) Problem #PRA4QZG "PRA4QZG - You did it! You g..."

You did it! You got three right in a row for the **easier problems**.

Now get three right in a row for the **harder problems**.

OK

124) Problem #PRA4GSF "PRA4GSF - Money Count - Leftover"

Ryan has 8 nickels. He used the money to buy a Pokemon trade card. The card cost 39 pennies. How many cents does he have left?

125) Problem #PRA4GS4 "PRA4GS4 - Money Count Dollar"

Lee has 1 dollar(s). Coleman has 4 quarter(s). How many cents do they have in total?

-

126) Problem #PRA4GSV "PRA4GSV - Money Count - Leftover"

Ryan has 5 quarters. He used the money to buy a balloon. The balloon cost 80 pennies. How many cents does he have left?

127) Problem #PRA4GTC "PRA4GTC - Money Count"

Alex has 2 quarter(s). Lee has 24 pennies. How many cents do they have in total?

-

128) Problem #PRA4GSW "PRA4GSW - Money Count - Leftover"

Ryan has 3 quarters. He used the money to buy a balloon. The balloon cost 26 pennies. How many cents does he have left?

129) Problem #PRA4GS5 "PRA4GS5 - Money Count Dollar"

Lee has 3 dollar(s). Coleman has 4 quarter(s). How many cents do they have in total?

-

130) Problem #PRA4GTM "PRA4GTM - Money Count - Leftover"

Ryan has 8 dimes. He used the money to buy a Pokemon trade card. The card cost 60 pennies. How many cents does he have left?

131) Problem #PRA4GS6 "PRA4GS6 - Money Count Dollar"

Lee has 1 dollar(s). Coleman has 3 quarter(s). How many cents do they have in total?

-

132) Problem #PRA4GSM "PRA4GSM - Money Count - Leftover"

Ryan has 15 nickels. He used the money to buy a Pokemon trade card. The card cost 34

pennies. How many cents does he have left?

133) Problem #PRA4GTB "PRA4GTB - Money Count"

Adam has 3 quarter(s). Lee has 3 pennies. How many cents do they have in total?

-

134) Problem #PRA4GTJ "PRA4GTJ - Money Count - Leftover"

Ryan has 7 dimes. He used the money to buy a Pokemon trade card. The card cost 32 pennies. How many cents does he have left?

135) Problem #PRA4GTD "PRA4GTD - Money Count"

David has 3 quarter(s). Ollie has 11 pennies. How many cents do they have in total?

-

136) Problem #PRA4GSG "PRA4GSG - Money Count - Leftover"

Ryan has 18 nickels. He used the money to buy a Pokemon trade card. The card cost 25 pennies. How many cents does he have left?

137) Problem #PRA4GTR "PRA4GTR - Money Count - Leftover"

Ryan has 6 dimes. He used the money to buy a Pokemon trade card. The card cost 34 pennies. How many cents does he have left?

138) Problem #PRA4GTE "PRA4GTE - Money Count"

Daniel has 2 quarter(s). Ollie has 23 pennies. How many cents do they have in total?

-

139) Problem #PRA4GSX "PRA4GSX - Money Count - Leftover"

Ryan has 5 quarters. He used the money to buy a balloon. The balloon cost 123 pennies. How many cents does he have left?

140) Problem #PRA4GTF "PRA4GTF - Money Count"

Edson has 3 quarter(s). Aiden has 9 pennies. How many cents do they have in total?

-

141) Problem #PRA4GSZ "PRA4GSZ - Money Count - Leftover"

Ryan has 3 quarters. He used the money to buy a balloon. The balloon cost 35 pennies. How many cents does he have left?

142) Problem #PRA4GS8 "PRA4GS8 - Money Count Dollar"

Lee has 3 dollar(s). Coleman has 4 quarter(s). How many cents do they have in total?

-

143) Problem #PRA4GS3 "PRA4GS3 - Money Count - Leftover"

Ryan has 3 quarters. He used the money to buy a balloon. The balloon cost 35 pennies. How many cents does he have left?

144) Problem #PRA4GTH "PRA4GTH - Money Count"

Edson has 3 quarter(s). Aiden has 25 pennies. How many cents do they have in total?

-

145) Problem #PRA4GSJ "PRA4GSJ - Money Count - Leftover"

Ryan has 11 nickels. He used the money to buy a Pokemon trade card. The card cost 20 pennies. How many cents does he have left?

146) Problem #PRA4NJB "PRA4NJB - Money Count Dollar"

Lee has 2 dollar(s). Coleman has 3 quarter(s). How many cents do they have in total?

-

147) Problem #PRA4GSH "PRA4GSH - Money Count - Leftover"

Ryan has 20 nickels. He used the money to buy a Pokemon trade card. The card cost 31 pennies. How many cents does he have left?

148) Problem #PRA4GTN "PRA4GTN - Money Count - Leftover"

Ryan has 4 dimes. He used the money to buy a Pokemon trade card. The card cost 13 pennies. How many cents does he have left?

149) Problem #PRA4GSK "PRA4GSK - Money Count - Leftover"

Ryan has 16 nickels. He used the money to buy a Pokemon trade card. The card cost 16 pennies. How many cents does he have left?

150) Problem #PRA4GS9 "PRA4GS9 - Money Count Dollar"

Lee has 1 dollar(s). Coleman has 5 quarter(s). How many cents do they have in total?

-

151) Problem #PRA4GSY "PRA4GSY - Money Count - Leftover"

Ryan has 4 quarters. He used the money to buy a balloon. The balloon cost 25 pennies. How many cents does he have left?

152) Problem #PRA4GTQ "PRA4GTQ - Money Count - Leftover"

Ryan has 3 dimes. He used the money to buy a Pokemon trade card. The card cost 23 pennies. How many cents does he have left?

153) Problem #PRA4GTP "PRA4GTP - Money Count - Leftover"

Ryan has 4 dimes. He used the money to buy a Pokemon trade card. The card cost 14 pennies. How many cents does he have left?

154) Problem #PRA4GTG "PRA4GTG - Money Count"

Edson has 2 quarter(s). Ollie has 19 pennies. How many cents do they have in total?

-

155) Problem #PRA4GTK "PRA4GTK - Money Count - Leftover"

Ryan has 5 dimes. He used the money to buy a Pokemon trade card. The card cost 38

pennies. How many cents does he have left?

156) Problem #PRA4NJ4 "PRA4NJ4 - Money Count - Leftover"

Ryan has 3 dimes. He used the money to buy a Pokemon trade card. The card cost 28 pennies. How many cents does he have left?

157) Problem #PRA4NHJ "PRA4NHJ - Money Count - Leftover"

Ryan has 12 nickels. He used the money to buy a Pokemon trade card. The card cost 28 pennies. How many cents does he have left?

158) Problem #PRA4GTA "PRA4GTA - Money Count Dollar"

Lee has 1 dollar(s). Coleman has 1 quarter(s). How many cents do they have in total?

-

159) Problem #PRA4NJQ "PRA4NJQ - Money Count"

Alex has 3 quarter(s). Nathan has 13 pennies. How many cents do they have in total?

-

160) Problem #PRA4GS2 "PRA4GS2 - Money Count - Leftover"

Ryan has 2 quarters. He used the money to buy a balloon. The balloon cost 38 pennies. How many cents does he have left?

161) Problem #PRA4NHX "PRA4NHX - Money Count - Leftover"

Ryan has 4 quarters. He used the money to buy a balloon. The balloon cost 82 pennies. How many cents does he have left?

162) Problem #PRA4GS7 "PRA4GS7 - Money Count Dollar"

Lee has 2 dollar(s). Coleman has 4 quarter(s). How many cents do they have in total?

-

163) Problem #PRA4NK3 "PRA4NK3 - Evaluation"

A) You did it, you got three problems correct in a row! This problem set is almost done.

We want to ask you two questions about how you feel then there will be two harder coin questions.

Did you enjoy these problems?

I enjoyed these problem a lot

I enjoyed them some

I did not enjoy them

B) In this problem set did you think the problems got easier over time?

Yes

Not sure

No

164) Problem #PRA4NK5 "PRA4NK5 - Challenge 1"

Joshua has 6 dimes and 4 nickels. He used the money to buy a Pokemon trade card. The card cost 72 pennies. How many cents does Joshua have left?

165) Problem #PRA4NK6 "PRA4NK6 - Challenge 2"

Peter has 2 quarters and 8 nickels. He used the money to buy a Pokemon trade card. The card cost 55 pennies. How many cents does Peter have left?

7.2. Appendix B - Excel spreadsheet

7.2.1. Elapsed Time – PSASA67

"user_id"	Pass or Fail Video	Text or Video FB	Binary of Text or Video	Experiment of Charlie Or Tom	"correct Problem 2" - handle tom and charlie	problem 3 after seeing the video on	"correct Problem 3"	"correct Problem 4"
291441	Pass video check	1 Text FB	0	Text FB	1	1	1	1
291443	Pass video check	1 Text FB	0	Text FB	1	1	1	1
291445	Pass video check	1 Text FB	0	Text FB	1	1	1	1
291447	Pass video check	1 Text FB	0	Text FB	1	1	1	1
291455	Pass video check	1 Text FB	0	Text FB	1	1	1	1
291463	Pass video check	1 Text FB	0	Text FB	1	1	1	1
291474	Pass video check	1 Text FB	0	Text FB	1	0	1	1
291476	Pass video check	1 Text FB	0	Text FB	0	1	1	1
291488	Pass video check	1 Text FB	0	Text FB	1	0	1	1
291741	Pass video check	1 Text FB	0	Text FB	1	0	1	1
291740	Fail video check							0
291757	Fail video check							1
291454	Fail video check							1
309956	Fail video check							1
305193	Fail video check							1
291446	Fail video check							1
291435	Pass video check	0 Video FB	1	Charlie	1	1	1	1
291436	Pass video check	0 Video FB	1	Charlie	0	1	1	1
291452	Pass video check	0 Video FB	1	Charlie	0	0	0	1
291456	Pass video check	0 Video FB	1	Charlie	1	1	1	1
291458	Pass video check	0 Video FB	1	Charlie	0	1	1	1
291466	Pass video check	0 Video FB	1	Charlie	1	1	1	1
291481	Pass video check	0 Video FB	1	Charlie	1	1	1	1
291755	Pass video check	0 Video FB	1	Charlie	1	1	1	0
294612	Pass video check	0 Video FB	1	Charlie	1	1	1	1
291442	Pass video check	0 Video FB	1	Tom	0	1	1	1
291449	Pass video check	0 Video FB	1	Tom	1	1	0	1
291460	Pass video check	0 Video FB	1	Tom	1	1	1	1
291464	Pass video check	0 Video FB	1	Tom	1	1	1	1
291465	Pass video check	0 Video FB	1	Tom	0	1	1	1
291492	Pass video check	0 Video FB	1	Tom	1	1	1	1
Total Average		#DIV/0!		0.6	#DIV/0!	0.76	0.79166667	0.9
Average for Text FB		#DIV/0!		0	#DIV/0!	0.9	0.7	0.9
Average for Charlie		#DIV/0!	1	#DIV/0!	0.66666667	0.66666667	0.875	0.875
Average for Tom		#DIV/0!	1	#DIV/0!	0.66666667	1	0.83333333	1
Average for video(Tom + charlie)		#DIV/0!	1	#DIV/0!	0.66666667	0.8	0.85714287	0.928571429
Stdev of Text FB		#DIV/0!	0	#DIV/0!	0.316227766		0.483045892	0.316227766
Stdev of Charlie		#DIV/0!	0	#DIV/0!	0.5	0.577350269	0.353553391	0.353553391
Stdev of Tom		#DIV/0!	0	#DIV/0!	0.516397779	0	0.40824829	0
Stdev Video (Tom + charlie)		#DIV/0!	0	#DIV/0!	0.487950036	0.447213595	0.36313652	0.267261242
Pool Stdev of Video + Text fb		#DIV/0!	0	#DIV/0!	0.402088901		0.423091206	0.291744504
Pool Stdev of Video (Tom + Charlie)		#DIV/0!	0	#DIV/0!	0.50819889	0.288675135	0.380900841	0.176776695
Ttest Text FB Vs Charlie		#DIV/0!	#DIV/0!	#DIV/0!	0.235611497		0.404858097	0.876249542
Ttest Text FB Vs Tom		#DIV/0!	#DIV/0!	#DIV/0!	0.276934129		0.581626837	0.457687905
Ttest Charlie Vs Tom		#DIV/0!	#DIV/0!	#DIV/0!		0.495025346	0.841405927	0.408158207
Ttest for Text FB Vs Video		#DIV/0!	#DIV/0!	#DIV/0!	0.1958394	#DIV/0!	0.271910904	0.813044805
Effect Size Tom and Charlie		#DIV/0!	#DIV/0!	#DIV/0!	0	1.154700538	-0.1093898	0.707106781
Effect Size Video and Text		#DIV/0!	#DIV/0!	#DIV/0!	-0.580302845		0.371416033	0.097933048
Stdev of Text FB		0.475190963						
Stdev of Charlie		0.444802723			How many got it right after seeing t		2	
Stdev of Tom		0.401609664			How many got it right after seeing t		2	
Pool Stdev		0.44053445						
How many gets assigned the video?	15							
How many actually saw the video?	5							
How many actually saw the video of Charlie?	3							
How many actually saw the video of Tom?	2							
How many people didn't need the video?	10							
How many assigned text:	10							
How many ppl need it?:	1							
Ttest for assigned text fb vs Charlie	0.235611497							
Ttest for assigned text fb vs Tom	0.276934129							
Ttest for assigned Tom vs Charlie	1							
Ttest for assigned text fb vs Video fb	0.1958394							
291476	Pass video check	1 Text FB	0	Text FB	0	1	1	1
291436	Pass video check	0 Video FB	1	Charlie	0	1	1	1
291452	Pass video check	0 Video FB	1	Charlie	0	0	0	1
291458	Pass video check	0 Video FB	1	Charlie	0	1	1	1
291442	Pass video check	0 Video FB	1	Tom	0	1	1	1
291465	Pass video check	0 Video FB	1	Tom	0	1	1	1
Average Video							0.8	1
Average Text FB							1	1
Stdev Video							0.447213595	0
Stdev Text							1	1
Pool Stdev video vs text							0.723606798	0.5
Effect Size Video and Text							0.276393202	0
Ttest for Text FB Vs Video								
Average Charlie							0.66666667	1
Average Tom							1	1
Stdev Charlie							0.577350369	0
Stdev Tom							0	0
Pool Stdev Charlie vs Tom							0.288675135	0
Effect Size Tom and Charlie							1.154700538	#DIV/0!
Ttest for Charlie Vs Tom							0.495025346	#DIV/0!
Stdev of both								
								0.527046277
								0.225751347
								0.547722558
								0.577350269
								1

"original"	"hint_count"	"bottom_hint"	"network_state"	"network_log_id"	"assignment_start_time"	"assignment_end_time"	Drop at question	assignment_start_time	assignment_end_time
1	0	0	"CONNECT"	5483576	"2015-03-27 11:00:05.945549"	"2015-03-27 11:06:05.919"		00:05.9	06:05.9
1	0	0	"CONNECT"	5490332	"2015-03-30 08:52:45.475449"	"2015-03-30 09:04:13.932"		52:45.5	04:13.9
1	0	0	"CONNECT"	5491030	"2015-03-30 09:45:11.564963"	"2015-03-30 09:52:48.198"		45:11.6	52:48.2
1	0	0	"CONNECT"	5483548	"2015-03-27 10:57:14.600557"	"2015-03-27 11:04:07.178"		57:14.6	04:07.2
1	0	0	"CONNECT"	5490310	"2015-03-30 08:51:26.618591"	"2015-03-30 08:56:35.335"		51:26.6	56:35.3
1	0	0	"CONNECT"	5510529	"2015-04-01 20:46:06.35011"	"2015-04-01 20:55:52.855"		46:06.3	55:52.9
1	0	0	"CONNECT"	5490805	"2015-03-30 09:28:31.719103"	"2015-03-30 09:42:29.769"		28:31.7	42:29.8
1	0	0	"CONNECT"	5490487	"2015-03-30 09:06:29.156088"	"2015-03-30 09:41:10.73"		06:29.2	41:10.7
1	0	0	"CONNECT"	5491018	"2015-03-30 09:44:24.746053"	"2015-03-30 09:55:14.991"		44:24.7	55:15.0
1	0	0	"CONNECT"	5472741	"2015-03-25 16:39:29.614978"	"2015-03-25 16:52:40.013"		39:29.6	52:40.0
1	0	0	"CONNECT"	5472602	"2015-03-25 16:20:08.680022"	"		20:08.7	
1	0	0	"CONNECT"	5509477	"2015-04-01 17:03:05.055453"	"		03:05.1	
1	0	0	"CONNECT"	5483601	"2015-03-27 11:02:32.992348"	"2015-03-27 11:09:18.158"		02:33.0	09:18.2
1	0	0	"CONNECT"	5472679	"2015-03-25 16:30:10.373816"	"		30:10.4	
1	0	0	"CONNECT"	5472798	"2015-03-25 16:49:41.915557"	"		49:41.9	
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1	0	0	"CONNECT"	5491220	"2015-03-30 09:58:46.619225"	"2015-03-30 10:12:37.1"		58:46.6	12:37.1
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1	0	0	"CONNECT"	5490279	"2015-03-30 08:48:47.050893"	"2015-03-30 09:08:36.635"		48:47.1	08:36.6
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0	2849.409	#DIV/0!	2849.409	7027.111	0	#DIV/0!	0	0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0	0.487950036
0	2705.111	#DIV/0!	2705.111	6671.248	0	#DIV/0!	0	0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0	0.402088901
0	1785.441	#DIV/0!	1785.441	4403.192	0	#DIV/0!	0	0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0	0.50819889
#DIV/0!	0.493449	#DIV/0!	0.493449	0.493449	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.235611497
#DIV/0!	0.457688	#DIV/0!	0.457688	0.457688	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.276934129
#DIV/0!	0.2445392	#DIV/0!	0.2445392	0.2445392	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1
#DIV/0!	0.8114574	#DIV/0!	0.8114574	0.8114574	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.1958394
#DIV/0!	-1.00791	#DIV/0!	-1.00791	-1.00791	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0
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4	5309	"Student"	5309	10555	22	"PSASA67"	447730	3206464	"SKILL BUILI"2015-03-2i-	-	-	-	1	0	
4	5309	"Student"	5309	10555	22	"PSASA67"	447730	3206464	"SKILL BUILI"2015-03-2i-	-	-	-	1	0	
4	5309	"Student"	5309	10555	22	"PSASA67"	447730	3206464	"SKILL BUILI"2015-03-2i-	-	-	-	1	0	
4	5309	"Student"	5309	10555	22	"PSASA67"	447730	3206464	"SKILL BUILI"2015-03-2i-	-	-	-	1	0	
4	5309	"Student"	5309	10555	22	"PSASA67"	447730	3206464	"SKILL BUILI"2015-03-2i-	-	-	-	1	0	
4	5309	"Student"	5309	10555	22	"PSASA67"	447730	3206464	"SKILL BUILI"2015-03-2i-	-	-	-	1	0	

"Correct Problem 3"	Problem 4"	Problem 5"	Problem 6"	Problem 7"	Problem 8"	Problem 9"	Problem 10"	Problem 11"	Problem 12"	Problem 13"	Problem 14"	Problem 15"	Problem 16"	Problem 17"	Problem 18"	Problem 19"	Problem 20"
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0.76666667	0.9	0.833333	0.785714	0.857143	0.740741	0.44	0.666667	0.5	0.5	0.6	0.5	0.333333	0.333333	0	0.5	0	#DIV/0!
0.7	0.9	0.7	0.8	0.9	0.7	0.4	1	0.75	0.5	1	1	0	0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
0.875	0.875	1	0.714286	0.714286	0.714286	0.571429	0.5	0.5	1	0.5	0.5	1	1	0	1	#DIV/0!	#DIV/0!
0.83333333	1	0.833333	1	1	1	0.4	0.666667	0	0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
0.85714286	0.928571	0.928571	0.833333	0.833333	0.833333	0.5	0.571429	0.333333	0.666667	0.5	0.5	1	1	0	1	#DIV/0!	#DIV/0!
0.48304589	0.316228	0.483046	0.421637	0.316228	0.483046	0.516398	0	0.5	0.57735	0	0.707107	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
0.35355339	0.353553	0	0.48795	0.48795	0.48795	0.534522	0.57735	#DIV/0!	#DIV/0!	0	0.707107	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
0.40824829	0	0.408248	0	0	0	0.547723	0.57735	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
0.36313652	0.267261	0.267261	0.389249	0.389249	0.389249	0.522233	0.534522	0.57735	0.57735	0.707107	0.707107	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
0.423091206	0.291745	0.375154	0.405443	0.352739	0.436148	0.519315	0.267261	0.538675	0.57735	0.353553	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
0.380900841	0.176777	0.204124	0.243975	0.243975	0.243975	0.541123	0.57735	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
0.404858097	0.87625	0.100025	0.704131	0.353998	0.953129	0.516636	0.133975	0.632813	0.3125	0.42265	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
0.581626837	0.457688	0.581627	0.316924	0.499964	0.196096	1	0.285591	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
0.841405927	0.4081583	0.2642961	0.2257513	0.2257513	0.2257513	0.5994703	0.7209712	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
0.371919094	0.8130448	0.1509725	0.8491925	0.6684854	0.4813303	0.6579282	0.1516275	0.3524132	0.7209712	0.4226497	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
-0.1093988	0.707107	-0.8165	1.17108	1.17108	1.17108	-0.3168	0.288675	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
0.371416033	0.097933	0.609274	0.082215	-0.189	0.305707	0.192561	-1.60357	-0.7735	0.288675	-1.41421	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
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id Problem	1"	2"	3"	4"	5"	6"	7"	8"	9"	10"	11"	12"	13"	14"	15"	16"	17"	18"	19"	20"
1115662	1095681	1102866	1102845	1119543	1140163	1140164	1140168	407917	-	-	-	-	-	-	-	-	-	-	-	-
1115662	1095681	1141566	1102866	1119543	1140163	1140164	1140168	407917	-	-	-	-	-	-	-	-	-	-	-	-
1115662	1095681	1102866	1141566	1119543	1140163	1140164	1140168	407917	-	-	-	-	-	-	-	-	-	-	-	-
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1115662	1095681	1141566	1102866	1102845	1141573	1141580	1141582	1140163	1140164	1140168	407917	-	-	-	-	-	-	-	-	-
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1115662	1141557	1141574	1113901	1140163	1140164	1140168	407917	-	-	-	-	-	-	-	-	-	-	-	-	-
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1115662	1113917	1140171	1119490	1141566	1119487	1140163	1140164	1140168	407917	-	-	-	-	-	-	-	-	-	-	-
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1115662	1113917	1113910	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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1115662	1116497	1113909	1141566	1119482	1140163	1140164	1140168	407917	-	-	-	-	-	-	-	-	-	-	-	-
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1115662	1116497	1141566	1119490	1140171	1119487	1140163	1140164	1140168	407917	-	-	-	-	-	-	-	-	-	-	-
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771820	1115662	1112992	1122583	1124095	1124815	1133835	1138977	1086394	818313	876384.4	1140691	862641.4	994276.8	950878.3	1140629	896552.7	1140876	774742.5	1141582	1141558
#DIV/0!	1115662	1095681	1114124	1122214	1112864	1140727	1140728	1140728	701097.2	1140516	1140514	774395.3	774040	1140164	1140168	407917	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
#DIV/0!	1115662	1113917	1121140	1131544	1127067	1134659	1140564	1140568	826745.9	774745.5	1140869	1140866	1140870	774736	1140163	1140164	1140168	407917	#DIV/0!	#DIV/0!
#DIV/0!	1115662	1116497	1127505	1124988	1125682	1132176	1140447	1140446	847266.6	651999.3	1140168	407917	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
#DIV/0!	1115662	1114949	1123686	1128734	1126474	1133624	1140515	1140517	835296.2	722140	1140635	896549.7	1140870	774736	1140163	1140164	1140168	407917	#DIV/0!	#DIV/0!
#DIV/0!	0	0	18966.88	20398.91	8622.81	728.012	727.6202	723.3808	378494.3	704.1668	694.6692	423173	517776.1	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
#DIV/0!	0	0	11435.98	13187.58	12153.34	10283.45	683.0888	685.6385	391778.9	423577.1	998.4348	992.7779	992.7779	518760.4	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
#DIV/0!	0	0	14902.02	13081.32	11967.53	11598.26	633.9255	625.655	401069.5	4232763	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
#DIV/0!	0	1308.299	12824.21	13068.84	11624.27	10457.47	635.806	634.5958	377262.8	391905.2	813.779	423168.9	992.7779	518760.4	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
#DIV/0!	0	654.1494	15895.55	16733.87	10123.54	5592.743	681.7131	678.9883	377878.6	196304.7	754.2241	423171	259384.4	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
#DIV/0!	0	0	13169	13134.45	12060.43	10990.85	658.5071	655.6468	396424.2	423170	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
#DIV/0!	#DIV/0!	#DIV/0!	0.349559	0.280548	0.010393	0.081398	0.646021	0.652461	0.516636	0.134903	0.627745	0.312509	0.421908	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
#DIV/0!	#DIV/0!	#DIV/0!	0.163577	0.771293	0.025692	0.031149	0.477319	0.471073	0.501039	0.06222	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
#DIV/0!	#DIV/0!	#DIV/0!	0.3655316	0.3739307	0.835438	0.7051121	0.7704038	0.7594271	0.931439	0.7197545	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
#DIV/0!	#DIV/0!	3.387E-24	0.1448719	0.3492791	0.0048669	0.0453538	0.4728828	0.4738413	0.416581	0.0666145	0.8394789	0.7209812	0.4219079	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
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1115662	1113917	1140171	1119490	1141566	1119487	1140163	1140164	1140168	407917	-	-	-	-	-	-	-	-	-	-	-
1115662	1113917	1119490	1140171	1141566	1141572	1141558	1141563	1141564	1141584	1140163	1140164	1140168	407917	-	-	-	-	-	-	-
1115662	1113917	1119490	1140171	1141566	1119487	1140163	1140164	1140168	407917	-	-	-	-	-	-	-	-	-	-	-
1115662	1116497	1140171	1119490	1141566	1119487	1140163	1140164	1140168	407917	-	-	-	-	-	-	-	-	-	-	-
1115662	1116497	1141566	1119490	1140171	1119487	1140163	1140164	1140168	407917	-	-	-	-	-	-	-	-	-	-	-

7.2.2. Coin values – PSASA4B

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291446	1338026	271	218	0.804428	24	22	2	0.090909	11	1	"CONNECTE	5483606	"2015-03-27 11:03:07.865155"	"2015-03-30 16:50:43.646"
291447	1338026	266	229	0.860902	24	22	2	0.090909	8	1	"CONNECTE	5483648	"2015-03-27 11:06:52.84082"	"2015-03-27 11:10:32.948"
291458	1338026	287	218	0.759582	24	22	2	0.090909	8	1	"CONNECTE	5490955	"2015-03-30 09:39:19.292448"	"2015-03-30 09:51:01.213"
291460	1338026	264	219	0.829545	24	22	2	0.090909	17	1	"CONNECTE	5483611	"2015-03-27 11:03:29.466313"	"2015-03-27 11:19:39.593"
291463	1338026	266	225	0.845865	24	22	2	0.090909	8	1	"CONNECTE	5510432	"2015-04-01 20:20:59.810731"	"2015-04-01 20:30:14.407"
291464	1338026	269	215	0.799257	24	22	2	0.090909	15	1	"CONNECTE	5483649	"2015-03-27 11:06:58.030493"	"2015-03-27 11:12:30.254"
291465	1338026	284	230	0.809859	24	22	2	0.090909	8	1	"CONNECTE	5490284	"2015-03-30 08:49:10.31311"	"2015-03-30 08:52:22.668"
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291488	1338026	265	231	0.871698	24	22	2	0.090909	8	1	"CONNECTE	5491200	"2015-03-30 09:55:42.484439"	"2015-03-30 09:58:44.875"
291740	1337078	210	156	0.742857	7	4	4	1	5	1	"CONNECTE	5509389	"2015-04-01 16:47:22.362748"	"
291755	1337078	113	89	0.787611	7	4	4	1	15	1	"CONNECTE	5472536	"2015-03-25 16:10:05.565606"	"2015-03-25 17:11:51.715"
309956	1337078	232	178	0.767241	7	4	4	1	20	1	"CONNECTE	5472609	"2015-03-25 16:20:48.07564"	"2015-03-25 17:13:58.137"
311499	1338163	-	-	-	14	9	-	-	19	1	"CONNECTE	5478429	"2015-03-26 14:30:25.118706"	"2015-03-26 14:45:25.986"
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311514	1338163	-	-	-	14	9	-	-	18	1	"CONNECTE	5478387	"2015-03-26 14:26:41.676189"	"2015-03-26 14:39:42.868"
311515	1338163	-	-	-	14	9	-	-	15	1	"CONNECTE	5478428	"2015-03-26 14:30:15.42823"	"2015-03-26 14:39:57.953"
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291466	1338026	282	213	0.755319	24	22	2	0.090909	12	1	"CONNECTE	5490896	"2015-03-30 09:35:05.286514"	"2015-03-30 09:42:04.544"
291474	1338026	311	237	0.762058	24	22	2	0.090909	8	1	"CONNECTE	5491002	"2015-03-30 09:43:02.689106"	"2015-03-30 09:46:43.067"
291476	1338026	283	220	0.777385	24	22	2	0.090909	8	1	"CONNECTE	5490590	"2015-03-30 09:14:30.255703"	"2015-03-30 09:43:14.547"
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291742	1337078	201	97	0.482587	7	4	4	1	16	1	"CONNECTE	5509336	"2015-04-01 16:37:53.864277"	"
291744	1337078	156	106	0.679487	7	4	4	1	6	1	"CONNECTE	5509259	"2015-04-01 16:23:00.495401"	"
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311511	1338163	-	-	-	14	9	-	-	14	1	"CONNECTE	5478290	"2015-03-26 14:13:46.974478"	"2015-03-26 14:23:42.15"
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Average for Adaptive	1337953	260.625	208	0.79758	18.54167	15.41667	2.375	0.261364	10.79166667	1	#DIV/0!	5485255.375	#DIV/0!	#DIV/0!
Average for Control	1335488	234.75	171.5	0.737582	17.28571	14.47619	2.4375	0.375	9.476190476	1	#DIV/0!	5477587	#DIV/0!	#DIV/0!
Ttest z	0.27465	0.329421	0.082356	0.029744	0.558984	0.691943	0.84365	0.430608	0.295536181	#DIV/0!	#DIV/0!	0.412451993	#DIV/0!	#DIV/0!
Stdev of Adaptive	943.8245	45.28558	37.69527	0.03991	6.433467	7.471201	0.806226	0.366466	4.782024009	0	#DIV/0!	9644.979085	#DIV/0!	#DIV/0!
stdev of Control	10928.19	94.06487	71.95554	0.097296	7.868563	8.346371	0.963933	0.435194	3.295740397	0	#DIV/0!	44275.03697	#DIV/0!	#DIV/0!
Pool Stdev	5636.009	69.67522	54.82541	0.068603	7.151015	7.908786	0.885079	0.40083	4.03882203	0	#DIV/0!	26960.00803	#DIV/0!	#DIV/0!
Effect size	0.43748	0.371366	0.66579	0.874575	0.175633	0.118915	-0.07062	-0.2835	0.325703035	#DIV/0!	#DIV/0!	0.28443519	#DIV/0!	#DIV/0!

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06:58.0	12:30.7	05:32.2	"2015-03-2"	63	"	"	1	"2015-03-2"	1	"Teacher"	"Class"	"4"	"2004"	"Unknown" K	
49:10.3	52:22.7	03:12.4	"2015-03-3"	63	"	"	1	"2015-03-2"	1	"Teacher"	"Class"	"4"	"2005"	"Female"	4
55:58.0		00:00.0	"2015-03-3"	63	"	"	1	"2015-03-2"	1	"Teacher"	"Class"	"4"	"2005"	"Female"	4
55:42.5	58:44.9	03:02.4	"2015-03-3"	63	"	"	1	"2015-03-2"	1	"Teacher"	"Class"	"4"	"2005"	"Male"	4
47:22.4		00:00.0	"2015-04-0"	50	"2018-04-0"	"2015-04-0"	1	"2015-03-2"	1	"Teacher"	"Class"	"N/A"	"2005"	"Unknown"	4
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18:55.5		00:00.0	"2015-03-2"	11	"	"	1	"2015-03-2"	1	"Teacher"	"Class"	"3"	"2005"	"Female"	3
26:41.7	39:42.9	13:01.2	"2015-03-2"	11	"	"	1	"2015-03-2"	1	"Teacher"	"Class"	"3"	"2006"	"Unknown"	3
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28:21.4	37:14.5	08:53.1	"2015-03-2"	50	"2018-04-0"	"2015-04-0"	1	"2015-03-2"	1	"Teacher"	"Class"	"N/A"	"2005"	"Unknown"	4
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43:21.3		00:00.0	"2015-03-2"	11	"	"	1	"2015-03-2"	1	"Teacher"	"Class"	"3"	"2005"	"Unknown"	3
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32:53.3	47:15.1	14:21.8	"2015-03-2"	11	"	"	1	"2015-03-2"	1	"Teacher"	"Class"	"3"	"2006"	"Female"	3
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42090.61597	42090.24842	0.078618832	#DIV/0!	#DIV/0!	44.66667	#DIV/0!	#DIV/0!	#DIV/0!	1	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	3.727273
42091.32544	42091.34477	0.141921534	#DIV/0!	#DIV/0!	44.04167	#DIV/0!	#DIV/0!	#DIV/0!	1	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	3.652174
42089.80514	42088.87798	0.142167106	#DIV/0!	#DIV/0!	45.38095	#DIV/0!	#DIV/0!	#DIV/0!	1	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	3.809524
0.467778017	0.338702734	0.352432381	#DIV/0!	#DIV/0!	0.852098	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.302055
2.196400358	2.127313604	0.660263838	#DIV/0!	#DIV/0!	24.23881	#DIV/0!	#DIV/0!	#DIV/0!	0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.486985
9.907243285	11.15636739	0.006206079	#DIV/0!	#DIV/0!	23.49569	#DIV/0!	#DIV/0!	#DIV/0!	0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.511766
6.051821821	6.641840498	0.333234959	#DIV/0!	#DIV/0!	23.86725	#DIV/0!	#DIV/0!	#DIV/0!	0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.499376
0.251213992	0.371400672	-0.000736932	#DIV/0!	#DIV/0!	-0.05611	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	-0.31509

