

NORTHERN ILLINOIS UNIVERSITY

Fluid Flow within Porous Media

A Report Submitted to the
University Honors Program
in Partial Fulfillment of the
Requirements of the Baccalaureate Degree
With University Honors

Department of Mathematics

by

Greg Fischer

May, 1987

Advisors: Professor Chaitan Gupta, Mathematics
Professor Pradip Majumdar, Mechanical Engineering

Approved by Stanley M. Trail, Chaitan Gupta

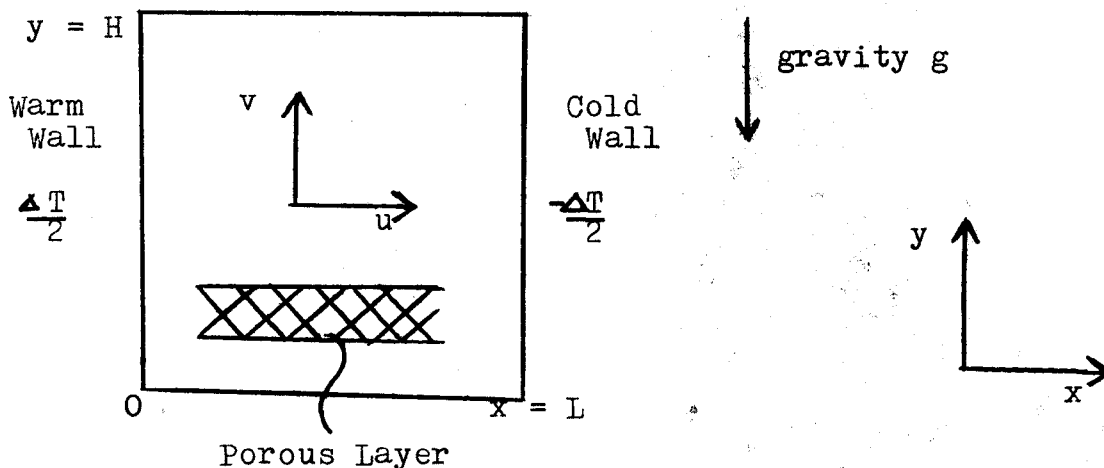
Department of Mathematics

Date: 11/21/86

Special thanks to Professor Greg Ammar, Mathematics, for his invaluable help with the printing of the computer output using the laser printer in the Math office.

BACKGROUND AND THEORY

The objective of this project is to observe the flow of fluid within a saturated, rectangular, two-dimensional porous media that is being heated from the side.



Let u denote the velocity of the fluid in the x -direction, and let v denote the velocity of the fluid in the y -direction. Let g denote gravity, which is directed in the $-y$ -direction.

Before detailing the mathematical theory, some basic assumptions must be stated.

BASIC ASSUMPTIONS

1. The porous medium is isotropic and homogeneous.
2. The physical properties of the medium are independent of temperature.
3. Overall volume change due to phase changes in the fluid or the medium are negligible.
4. Porosity is constant throughout the medium.

5. Within the porous medium, Darcy's Law is assumed to hold.
6. Viscosity drag and inertia terms of the momentum equations are neglected because their magnitude are of small order order compared to the other terms.

Darcy's Law is the governing law of groundwater flow. Let the term 'head' be applied to the height above sea level of water in a well. Then by a series of experiments Darcy found that, for different types of sand, the water volume discharge rate Q is directly proportional to the head drop $h_2 - h_1$ and to the cross-sectional area A , but it is inversely proportional to the length difference $l_2 - l_1$. Letting K be the proportionality constant of hydraulic conductivity gives Darcy's Law:

$$Q = -KA \frac{h_2 - h_1}{l_2 - l_1} .$$

The negative sign signifies that groundwater will flow in the direction of head loss. Now define $q = Q/A$ to be the volume rate of flow per unit area. If the head drop is taken over a smaller and smaller interval $l_2 - l_1$, Darcy's Law can be written

$$q = -K \frac{dh}{dl} .$$

This is the law which is assumed to hold within the isotropic porous medium.

Now for the mathematical details. The numerous variables and constants used in the equations are:

u = fluid velocity in the x-direction

v = fluid velocity in the y-direction

g = gravity

μ = viscosity

P = pressure

T = temperature

t_A = actual times

K = thermal conductivity of the porous matrix

ϕ = porosity of the medium

ρ = density

$(\rho C_p)_f$ = heat capacity
of the fluid

$(\rho C_p)_s$ = heat capacity
of the solid
matrix

Note: We assume density follows
the Boussinesq approximation:

$\rho = \rho_0 [1 - \beta(T - T_0)]$,
where β = coefficient of thermal
expansion. The approximation
says that density is constant
and only changes with changes
in temperature.

α = thermal diffusivity = $\frac{K}{(\rho C_p)_f}$

σ = heat capacity ratio = $\frac{\phi(\rho C_p)_f + (1 - \phi)(\rho C_p)_s}{(\rho C_p)_f}$

With all variables defined, the governing equations can
now be stated.

From the conservation of mass, we get

$$1) \quad \frac{\partial u}{\partial x} + \frac{\partial v}{\partial y} = 0.$$

Conservation of momentum in the x-direction gives

$$2) \quad u = \frac{-K}{\mu} \frac{\partial P}{\partial x}, \quad \text{which is Darcy's Law with proportionality constant } -K/\mu.$$

In the y-direction, conservation of momentum leads to

$$3) \quad v = \frac{-K}{\mu} \frac{\partial P}{\partial y} + \rho g.$$

Finally, conservation of energy gives

$$4) \quad \sigma \frac{\partial T}{\partial t_A} + u \frac{\partial T}{\partial x} + v \frac{\partial T}{\partial y} = \alpha \left(\frac{\partial^2 T}{\partial x^2} + \frac{\partial^2 T}{\partial y^2} \right).$$

By combining 2), 3), and Boussinesq's approximation, a fifth equation is obtained.

$$\text{From 2), } \frac{\partial u}{\partial y} = \frac{-K}{\mu} \frac{\partial^2 P}{\partial x \partial y}$$

$$\text{and from 3), } \frac{\partial v}{\partial x} = \frac{-K}{\mu} \frac{\partial^2 P}{\partial x \partial y} - \frac{Kg}{\mu} \frac{\partial P}{\partial x}.$$

$$\text{Subtracting gives } \frac{\partial u}{\partial y} - \frac{\partial v}{\partial x} = \frac{Kg}{\mu} \frac{\partial P}{\partial x}.$$

$$\text{Now } \rho = \rho_0 - \rho_0 \beta (T - T_0), \text{ therefore } \frac{\partial \rho}{\partial x} = -\rho_0 \beta \frac{\partial T}{\partial x}.$$

Substituting, we get

$$5) \quad \frac{\partial u}{\partial y} - \frac{\partial v}{\partial x} = \frac{Kg\beta}{\gamma} \frac{\partial T}{\partial x}, \quad \text{where } \gamma = \frac{\rho_0}{\mu}.$$

The three governing equations then become

$$1) \quad \frac{\partial u}{\partial x} + \frac{\partial v}{\partial y} = 0$$

$$2) \quad \frac{\partial u}{\partial y} - \frac{\partial v}{\partial x} = \frac{-Kg\beta}{\gamma} \frac{\partial T}{\partial x}$$

$$3) \quad \sigma \frac{\partial T}{\partial t_A} + u \frac{\partial T}{\partial x} + v \frac{\partial T}{\partial y} = \alpha \left(\frac{\partial^2 T}{\partial x^2} + \frac{\partial^2 T}{\partial y^2} \right).$$

Since we have three equations in the three unknowns u , v , and T , we can now solve for u , v , and T individually.

In order to begin solving, initial and boundary conditions are needed. The initial conditions are:

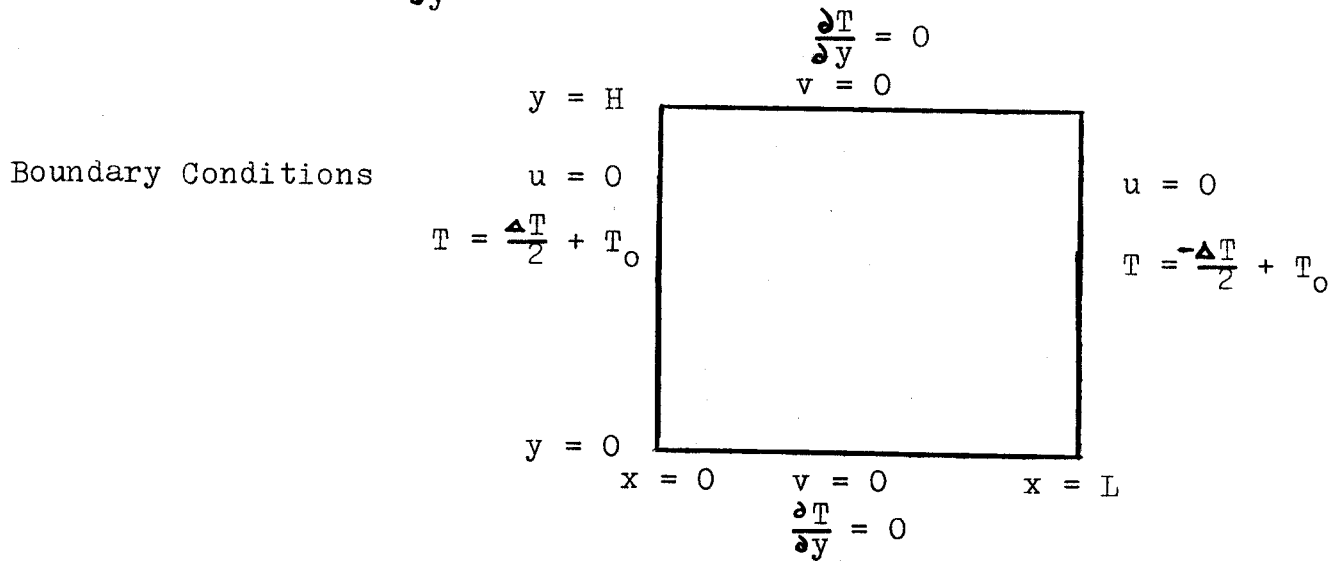
1. At time = 0, the medium is at uniform temperature T_0 throughout.
2. At time = 0, the fluid is motionless, i.e. $u = 0$ and $v = 0$ at all points in the medium.

The boundary conditions for all times are

$$\text{at } x = 0, \quad u = 0 \text{ and } T = \frac{\Delta T}{2} + T_0.$$

$$\text{at } x = L, \quad u = 0 \text{ and } T = -\frac{\Delta T}{2} + T_0.$$

at $y = 0$, $v = 0$ and $\frac{\partial T}{\partial y} = 0$
 at $y = H$, $v = 0$ and $\frac{\partial T}{\partial y} = 0$



The boundary conditions simply state that there is no fluid flowing out of the medium at any boundary wall, there is constant heat applied to the left-hand wall, and there is no temperature loss along the top or bottom boundaries.

Now that we have the three governing equations and the initial and boundary conditions, it is clear that with all of the variables and constants involved, units and dimensions could be a major problem. Therefore, the next step is to make the equations dimensionless.

In order to make x and y dimensionless, let $X = \frac{x}{L}$ and $Y = \frac{y}{H}$. Therefore, X and Y will have values between 0 and 1.

To make time t_A dimensionless, define $t = \frac{\alpha t_A}{\sigma_H^2}$.

Next, to make u and v dimensionless, let $U = \frac{u}{\alpha/L}$ and $V = \frac{v}{\alpha/H}$.

Finally, to make the temperature T dimensionless, define

$$\theta = \frac{T - T_0}{T}$$

Using the above variables, the governing equations can be redefined as follows:

from 1), $\frac{\partial u}{\partial x} + \frac{\partial v}{\partial y} = 0$.

Then $\frac{\partial u \cdot \frac{\alpha}{L}}{\partial x \cdot L} + \frac{\partial v \cdot \frac{\alpha}{H}}{\partial y \cdot H} = 0$

$$\frac{\partial U}{\partial X} \frac{\alpha/L}{L} + \frac{\partial V}{\partial Y} \frac{\alpha/H}{H} = 0$$

$$\frac{\alpha}{L^2} \frac{\partial U}{\partial X} + \frac{\alpha}{H^2} \frac{\partial V}{\partial Y} = 0$$

Multiplying by α/H^2 and letting $A = \frac{H}{L}$ = aspect ratio, we get

6) $A^2 \frac{\partial U}{\partial X} + \frac{\partial V}{\partial Y} = 0$.

From 5), $\frac{\partial u}{\partial y} - \frac{\partial v}{\partial x} = \frac{-Kg\beta}{\rho} \frac{\partial T}{\partial x}$.

Then

$$\frac{\partial u \cdot \frac{\alpha}{H}}{\partial y \cdot H} - \frac{\partial v \cdot \frac{\alpha}{L}}{\partial x \cdot L} = \frac{-Kg\beta}{\rho} \frac{\partial \theta}{\partial x} \frac{\Delta T}{L}$$

$$\frac{\alpha}{LH} \frac{\partial U}{\partial Y} - \frac{\alpha}{LH} \frac{\partial V}{\partial X} = \frac{-Kg\beta \Delta T}{\rho L} \frac{\partial \theta}{\partial X}$$

Multiplying by $\frac{LH}{\alpha}$ and letting R_{aH} = Rayleigh number = $\frac{Kg\beta H \Delta T}{\alpha \rho}$, we get

7) $\frac{\partial U}{\partial Y} - \frac{\partial V}{\partial X} = -R_{aH} \frac{\partial \theta}{\partial X}$.

From 4), $\sigma \frac{\partial T}{\partial t} + u \frac{\partial T}{\partial x} + v \frac{\partial T}{\partial y} = \alpha \left(\frac{\partial^2 T}{\partial x^2} + \frac{\partial^2 T}{\partial y^2} \right)$.

Then

$$\sigma \frac{\partial T}{\partial t} \frac{\alpha}{H^2} + \frac{\alpha \Delta T}{L^2} U \frac{\partial \theta}{\partial X} + \frac{\alpha \Delta T}{H^2} V \frac{\partial \theta}{\partial Y} = \alpha \Delta T \left(\frac{\partial^2 \theta}{\partial X^2 \cdot L^2} + \frac{\partial^2 \theta}{\partial Y^2 \cdot H^2} \right)$$

$$\frac{\Delta T \alpha}{H^2} \frac{\partial \theta}{\partial t} + \frac{\alpha \Delta T}{L^2} U \frac{\partial \theta}{\partial X} + \frac{\alpha \Delta T}{H^2} V \frac{\partial \theta}{\partial Y} = \alpha \Delta T \left(\frac{1}{L^2} \frac{\partial^2 \theta}{\partial X^2} + \frac{1}{H^2} \frac{\partial^2 \theta}{\partial Y^2} \right)$$

$$\frac{\alpha \Delta T}{H^2} \frac{\partial \theta}{\partial t} + \frac{\alpha \Delta T}{L^2} U \frac{\partial \theta}{\partial X} + \frac{\alpha \Delta T}{H^2} V \frac{\partial \theta}{\partial Y} = \frac{\alpha \Delta T}{H^2} \left(\frac{H^2}{L^2} \frac{\partial^2 \theta}{\partial X^2} + \frac{\partial^2 \theta}{\partial Y^2} \right)$$

Multiplying by $\frac{H^2}{\alpha \Delta T}$ and substituting $A = \frac{H}{L}$, we get

$$8) \quad \frac{\partial \theta}{\partial t} + A^2 U \frac{\partial \theta}{\partial X} + V \frac{\partial \theta}{\partial Y} = A^2 \frac{\partial^2 \theta}{\partial X^2} + \frac{\partial^2 \theta}{\partial Y^2} .$$

Therefore, the new dimensionless governing equations are:

$$6) \quad A^2 \frac{\partial U}{\partial X} + \frac{\partial V}{\partial Y} = 0$$

$$7) \quad \frac{\partial U}{\partial Y} - \frac{\partial V}{\partial X} = -R_{aH} \frac{\partial \theta}{\partial X}$$

$$8) \quad \frac{\partial \theta}{\partial t} + A^2 U \frac{\partial \theta}{\partial X} + V \frac{\partial \theta}{\partial Y} = A^2 \frac{\partial^2 \theta}{\partial X^2} + \frac{\partial^2 \theta}{\partial Y^2} .$$

New boundary conditions:

$$\text{at } X = 0, U = 0 \text{ and } \theta = \frac{1}{2}$$

$$\text{at } X = 1, U = 0 \text{ and } \theta = -\frac{1}{2}$$

$$\text{at } Y = 0, V = 0 \text{ and } \frac{\partial \theta}{\partial Y} = 0$$

$$\text{at } Y = 1, V = 0 \text{ and } \frac{\partial \theta}{\partial Y} = 0.$$

THE EXPLICIT FINITE DIFFERENCES NUMERICAL METHOD

From elementary calculus, the derivative is defined as the slope of the tangent line to a graph of a function f at a point $(x, f(x))$. This is expressed mathematically as $f'(x) = \lim_{h \rightarrow 0} \frac{f(x+h) - f(x)}{h}$, where h is the distance between points x_i and x_{i+1} .

Therefore, for small h , $f'(x) \approx \frac{f(x+h) - f(x)}{h}$. The smaller h becomes, the closer this approximation comes to the analytical solution.

To approximate second derivatives $f''(x)$, we need to expand $f(x+h)$ and $f(x-h)$ using Taylor's formula.

$$f(x+h) = f(x) + hf'(x) + \frac{h^2}{2!} f''(x) + \frac{h^3}{3!} f'''(x) + \frac{h^4}{4!} f^{(4)}(x) + \dots$$

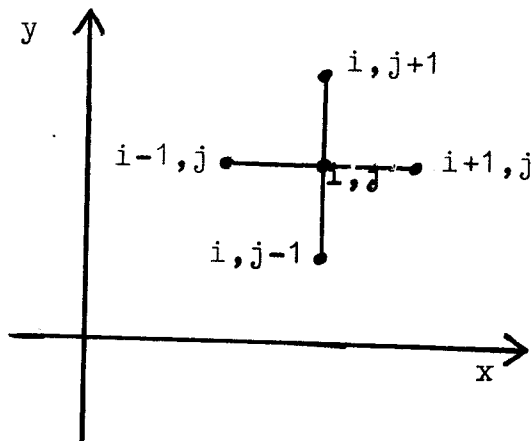
$$f(x-h) = f(x) - hf'(x) + \frac{h^2}{2!} f''(x) - \frac{h^3}{3!} f'''(x) + \frac{h^4}{4!} f^{(4)}(x) - \dots$$

Adding these two equations gives

$$f(x+h) + f(x-h) = 2f(x) + h^2 f''(x) + \frac{h^4}{12} f^{(4)}(x) + \dots$$

$$\text{Solving for } f''(x) \text{ gives } f''(x) = \frac{f(x+h) - 2f(x) + f(x-h)}{h^2} + O(h^2)$$

In order to apply these approximations to the governing equations, an index numbering convention must be adopted. Let the integer pair (i, j) specify any point on the grid pictured below.



Then $(i-1, j)$ will denote the point a distance $-\Delta x$ from (i, j) ,
 $(i+1, j)$ will denote the point a distance $+\Delta x$ from (i, j) ,
 $(i, j-1)$ will denote the point a distance $-\Delta y$ from (i, j) ,
and $(i, j+1)$ will denote the point a distance $+\Delta y$ from (i, j) .

Using this indexing convention, the approximations for a point p become

$$p'_x = \frac{\partial p}{\partial x} = \frac{p_{i+1,j} - p_{i,j}}{\Delta x} \quad \text{and} \quad p''_x = \frac{\partial^2 p}{\partial x^2} = \frac{p_{i-1,j} - 2p_{i,j} + p_{i+1,j}}{(\Delta x)^2}$$

$$p'_y = \frac{\partial p}{\partial y} = \frac{p_{i,j+1} - p_{i,j}}{\Delta y} \quad \text{and} \quad p''_y = \frac{\partial^2 p}{\partial y^2} = \frac{p_{i,j-1} - 2p_{i,j} + p_{i,j+1}}{(\Delta y)^2}$$

By expressing the governing equations in terms of the approximations, an approximate numerical solution can be obtained.

From 6), $A^2 \frac{\partial U}{\partial X} + \frac{\partial V}{\partial Y} = 0.$

We approximate

$$\frac{\partial U}{\partial X} = \frac{U_{i+1,j} - U_{i,j}}{\Delta X} \quad \text{and} \quad \frac{\partial V}{\partial Y} = \frac{V_{i,j+1} - V_{i,j}}{\Delta Y}.$$

If $\Delta X = \Delta Y$, 6) becomes $A^2(U_{i+1,j} - U_{i,j}) + V_{i,j+1} - V_{i,j} = 0.$

Solving for $U_{i,j}$ gives

$$9) \quad U_{i,j} = U_{i+1,j} + \frac{1}{A^2}(V_{i,j+1} - V_{i,j})$$

From 7), $\frac{\partial U}{\partial Y} - \frac{\partial V}{\partial X} = -R_{aH} \frac{\partial \theta}{\partial X}.$

We approximate

$$\frac{\partial U}{\partial Y} = \frac{U_{i,j+1} - U_{i,j}}{\Delta Y} \quad \frac{\partial V}{\partial X} = \frac{V_{i+1,j} - V_{i,j}}{\Delta X}$$

$$\text{and} \quad \frac{\partial \theta}{\partial X} = \frac{\theta_{i+1,j} - \theta_{i,j}}{\Delta X}.$$

If $\Delta X = \Delta Y$, 7) becomes $U_{i,j+1} - U_{i,j} - V_{i+1,j} + V_{i,j} = -R_{aH}(\theta_{i+1,j} - \theta_{i,j}).$

Solving for $V_{i,j}$ gives

$$10) \quad V_{i,j} = -R_{aH}(\theta_{i+1,j} - \theta_{i,j}) + U_{i,j} - U_{i,j+1} + V_{i+1,j}.$$

$$\text{From 8), } \frac{\partial \theta}{\partial t} + A^2 U \frac{\partial \theta}{\partial X} + V \frac{\partial \theta}{\partial Y} = A^2 \frac{\partial^2 \theta}{\partial X^2} + \frac{\partial^2 \theta}{\partial Y^2}.$$

Approximate

$$\frac{\partial \theta}{\partial X} = \frac{\theta_{i+1,j} - \theta_{i,j}}{\Delta X}, \quad \frac{\partial \theta}{\partial Y} = \frac{\theta_{i,j+1} - \theta_{i,j}}{\Delta Y}$$

$$\frac{\partial^2 \theta}{\partial X^2} = \frac{\theta_{i-1,j} - 2\theta_{i,j} + \theta_{i+1,j}}{(\Delta X)^2}, \quad \frac{\partial^2 \theta}{\partial Y^2} = \frac{\theta_{i,j-1} - 2\theta_{i,j} + \theta_{i,j+1}}{(\Delta Y)^2}.$$

For $\frac{\partial \theta}{\partial t}$, we will use the notation $\theta_{i,j}^n$ to indicate the value evaluated at time step n . Then

$$\frac{\partial \theta}{\partial t} = \frac{\theta_{i,j}^{n+1} - \theta_{i,j}^n}{\Delta t} \quad \text{is called the forward difference and}$$

$$\frac{\partial \theta}{\partial t} = \frac{\theta_{i,j}^n - \theta_{i,j}^{n-1}}{\Delta t} \quad \text{is called the backward difference.}$$

Introducing this time notation in the other approximations and using the forward difference, 8) becomes

$$\begin{aligned} \frac{\theta_{i,j}^{n+1} - \theta_{i,j}^n}{\Delta t} + A^2 U_{i,j} \frac{\theta_{i+1,j}^n - \theta_{i,j}^n}{\Delta X} + V_{i,j} \frac{\theta_{i,j+1}^n - \theta_{i,j}^n}{\Delta Y} \\ = \frac{A^2(\theta_{i-1,j}^n - 2\theta_{i,j}^n + \theta_{i+1,j}^n)}{(\Delta X)^2} + \frac{\theta_{i,j-1}^n - 2\theta_{i,j}^n + \theta_{i,j+1}^n}{(\Delta Y)^2} \end{aligned}$$

If $\Delta X = \Delta Y$, solving for $\theta_{i,j}^{n+1}$ gives

$$\begin{aligned} 11) \quad \theta_{i,j}^{n+1} = \theta_{i,j}^n + \frac{\Delta t}{(\Delta X)^2} \left[A^2(\theta_{i-1,j}^n + \theta_{i+1,j}^n) + \theta_{i,j-1}^n + \theta_{i,j+1}^n \right. \\ \left. + (-2A^2 - 1)\theta_{i,j}^n \right] - \frac{\Delta t}{\Delta X} \left[A^2 U_{i,j} \theta_{i+1,j}^n + V_{i,j} \theta_{i,j+1}^n \right. \\ \left. - \theta_{i,j}^n (A^2 U_{i,j} + V_{i,j}) \right]. \end{aligned}$$

Therefore, we now have three equations 9), 10), and 11)

which can be used to approximate the values for $U_{i,j}$, $V_{i,j}$, and $\theta_{i,j}$ for inner points of the medium. The boundary points must be approximated using separate equations.

Notice at $Y = 0$, a point with an index of $j-1$ will reference a point outside of the medium. We also know that $\frac{\partial \theta}{\partial Y} = 0$ at $Y = 0$. Then

$$\frac{\theta_{i,j}^n - \theta_{i,j-1}^n}{\Delta Y} = 0, \text{ or } \theta_{i,j-1}^n = \theta_{i,j}^n.$$

This approximation can be plugged into 11) to get

$$12) \theta_{i,j}^{n+1} = \theta_{i,j}^n + \frac{\Delta t}{(\Delta X)^2} \left[A^2(\theta_{i-1,j}^n + \theta_{i+1,j}^n) + \theta_{i,j+1}^n + (-2A^2 - 1)\theta_{i,j}^n \right] \\ - \frac{\Delta t}{\Delta X} \left[A^2 U_{i,j} \theta_{i+1,j}^n + V_{i,j} \theta_{i,j+1}^n - \theta_{i,j}^n (A^2 U_{i,j} + V_{i,j}) \right].$$

At $Y = 1$, an index of $j+1$ will be outside the domain, and the boundary conditions state that $\frac{\partial \theta}{\partial Y} = 0$. Then

$$\frac{\theta_{i,j+1}^n - \theta_{i,j}^n}{\Delta Y} = 0, \text{ or } \theta_{i,j+1}^n = \theta_{i,j}^n \text{ must be used. Plugging into 11) gives}$$

$$13) \theta_{i,j}^{n+1} = \theta_{i,j}^n + \frac{\Delta t}{(\Delta X)^2} \left[A^2(\theta_{i-1,j}^n + \theta_{i+1,j}^n) + \theta_{i,j-1}^n + (-2A^2 - 1)\theta_{i,j}^n \right] \\ - \frac{\Delta t}{\Delta X} A^2 U_{i,j} \left[\theta_{i+1,j}^n - \theta_{i,j}^n \right].$$

For velocities on the boundary, there are only two new calculations to make.

At $Y = 0$, we again don't want a $j-1$ index. Also, $V = 0$ at $Y = 0$. But there is no problem because equation 9) has no $j-1$ index.

Similarly, at $X = 0$, we don't want an $i-1$ index. Also, the boundary conditions state that $U = 0$ when $X = 0$. But again we have no problem since equation 10) has no $i-1$ index.

At $Y = 1$, $V = 0$ and an index of $j+1$ is outside the boundary. Therefore, we can redefine $\frac{\partial V}{\partial Y} = \frac{V_{i,j} - V_{i,j-1}}{\Delta Y}$ so that 9) becomes

$$14) \quad U_{i,j} = U_{i+1,j} + \frac{1}{A^2} (V_{i,j} - V_{i,j-1}) \quad .$$

At $X = 1$, $U = 0$ and an index of $i+1$ is not wanted. Therefore, we want to redefine $\frac{\partial V}{\partial X} = \frac{V_{i,j} - V_{i-1,j}}{\Delta X}$ and

$$\frac{\partial \theta}{\partial X} = \frac{\theta_{i,j} - \theta_{i-1,j}}{\Delta X} \quad . \quad \text{Then 10) becomes}$$

$$15) \quad V_{i,j} = R_{aH}(\theta_{i,j} - \theta_{i-1,j}) + U_{i,j+1} - U_{i,j} + V_{i-1,j} \quad .$$

Using equations 9) - 11) for inner grid points and 12) - 15) for boundary points, we can write a FORTRAN program and solve for values of $\theta_{i,j}$, $V_{i,j}$, and $U_{i,j}$ over a period of time. By varying the values of A and R_{aH} , a sensitivity analysis can be done to examine the changes of flow and heat transfer with the changes of these constants.

IMPLEMENTATION OF THE EXPLICIT FINITE DIFFERENCES METHOD

The explicit finite differences numerical method is best suited for computer solution, as doing the calculations by hand would be very tedious and time consuming. The FORTRAN program that appears on the following pages will allow us to examine the changes in U , V , and θ over a period of time with different values of A and R_{aH} .

```

C*****
C**          HONORS PROJECT          **
C**          **                      **
C**  FUNCTION - THIS PROGRAM IS USED TO IMPLEMENT THE FINITE **
C**          DIFFERENCES NUMERICAL METHOD TO SOLVE FOR TEMPERATURE**
C**          AND VELOCITY VALUES FOR A RECTANGULAR, HOMOGENEOUS **
C**          POROUS MEDIA THAT IS SATURATED WITH FLUID AND HEATED **
C**          FROM THE SIDE.          **
C**          **                      **
C**  INPUT - NONE.                  **
C**          **                      **
C**  OUTPUT - THIS PROGRAM PRINTS THE VELOCITY VALUES IN THE X AND **
C**          Y DIRECTIONS, ALONG WITH THE TEMPERATURE VALUES WITHIN **
C**          THE MEDIA.              **
C**          **                      **
C*****

```

```

      INTEGER I,J,N,STEP
      REAL T(30,30),U(30,30),V(30,30),DX,DTIME,TIME,A,R,VAL1,VAL2

```

```

C*****
C**          INITIALIZE VALUES          **
C**          **                      **
C**  N = NUMBER OF POINTS TAKEN ACROSS THE MEDIA          **
C**  DX = DISTANCE BETWEEN POINTS IN THE X AND Y DIRECTIONS **
C**  DTIME = TIME STEP **
C**  R = RAYLEIGH NUMBER **
C**  A = ASPECT RATIO = HEIGHT/LENGTH OF RECTANGULAR MEDIUM **
C**  STEP = DISTANCE BETWEEN POINTS THAT ARE PRINTED **
C**          **                      **
C*****

```

```

      N = 21
      DX = 1.0/FLOAT(N)
      STEP = IFIX((FLOAT(N) - 1.0)/10.0)
      DTIME=0.001
      R = 1.0
      A = 1.0

```

```

C*****
C**          INITIALIZE ARRAY POINTS          **
C**          **                      **
C**  INITIALIZE ALL VELOCITY IN THE X AND Y DIRECTION TO 0. **
C**  INITIALIZE THE INTERIOR TEMPERATURE POINTS TO A TEMPERATURE TO. **
C**          THEREFORE, BY THE WAY WE DEFINED THE DIMENSIONLESS **
C**          TEMPERATURE, THE INTERIOR POINTS ARE 0. **
C**  INITIALIZE THE FIRST COLUMN OF TEMPERATURES TO 0.5 AND THE **
C**          LAST COLUMN TO -0.5. **
C**  INITIALIZE ALL CORNER POINTS TO 0.5 **
C**          **                      **
C*****

```

```

      DO 100 J=1,N
        DO 50 I=1,N
          T(I,J) = 0
          U(I,J) = 0
          V(I,J) = 0

```

```

50      CONTINUE
100     CONTINUE
      DO 175 J=1,N
        T(1,J) = 0.5
        T(N,J) = -0.5
175     CONTINUE

```

T(N,1) = 0.5
T(N,N) = 0.5

C*****
C** CALCULATE TEMPERATURE, VELOCITY IN X AND Y DIRECTION **
C*****
C*

```
DO 999 TIME=DTIME, 11*DTIME, DTIME
DO 250 I=1, N
DO 200 J=1, N
  IF (J.EQ.1.AND.I.NE.1) THEN
    VAL1=(A*A)*U(I, J)+V(I, J)*T(I, J)
    VAL1=(A*A)*U(I, J)*T(I+1, J) + V(I, J)*T(I, J+1) - VAL1
    VAL1 = (DTIME/DX)*VAL1
    VAL2 = (A*A)*(T(I-1, J)+T(I+1, J)) + T(I, J+1)
    VAL2 = VAL2 + (-2.0*A*A - 1)*T(I, J)
    T(I, J) = T(I, J) + (DTIME/(DX*DX))*VAL2 - VAL1
  ELSE IF (J.EQ.N.AND.I.NE.1) THEN
    VAL1 = (DTIME/DX)*(A*A)*U(I, J)*(T(I+1, J)-T(I, J))
    VAL2 = (A*A)*(T(I-1, J) + T(I+1, J)) + T(I, J-1)
    VAL2 = VAL2 + (-2.0*A*A - 1)*T(I, J)
    T(I, J) = T(I, J) + (DTIME/(DX*DX))*VAL2 - VAL1
  ELSE IF (I.NE.1.AND.I.NE.N) THEN
    VAL1 = (A*A)*U(I, J)*T(I+1, J) + V(I, J)*T(I, J+1)
    VAL1 = VAL1 - T(I, J)*((A*A)*U(I, J) + V(I, J))
    VAL1 = (DTIME/DX)*VAL1
    VAL2=(A*A)*(T(I-1, J)+T(I+1, J)) + T(I, J+1) + T(I, J-1)
    VAL2 = VAL2 + (-2.0*A*A - 2.0)*T(I, J)
    T(I, J) = T(I, J) + (DTIME/(DX*DX))*VAL2 - VAL1
  ENDIF
  IF (I.EQ.1.AND.J.GT.1.AND.J.LT.N) THEN
    V(I, J)=-R*(T(I+1, J)-T(I, J))+U(I, J)-U(I, J+1)+V(I+1, J)
  ELSE IF (I.EQ.N.AND.J.GT.1.AND.J.LT.N) THEN
    V(I, J)=R*(T(I, J)-T(I-1, J))+U(I, J+1)-U(I, J)+V(I-1, J)
  ELSE IF (J.EQ.1.AND.I.GT.1.AND.I.LT.N) THEN
    U(I, J)=U(I+1, J)+(1.0/(A*A))*(V(I, J+1)-V(I, J))
  ELSE IF (J.EQ.N.AND.I.GT.1.AND.I.LT.N) THEN
    U(I, J)=U(I+1, J)+(1.0/(A*A))*(V(I, J)-V(I, J-1))
  ELSE IF (I.NE.1.AND.J.NE.1.AND.I.NE.N.AND.J.NE.N) THEN
    V(I, J)=-R*(T(I+1, J)-T(I, J))+U(I, J)-U(I, J+1)+V(I+1, J)
    U(I, J)=U(I+1, J)+(1.0/(A*A))*(V(I, J+1)-V(I, J))
  ENDIF
```

```
200 CONTINUE
250 CONTINUE
C*****
C** PRINT VALUES **
C** **
C** PRINT THE VELOCITY VALUES IN THE X AND Y DIRECTIONS ALONG WITH **
C** THE TEMPERATURE VALUES FOR THIS TIME STEP. **
C** **
C*****
```

```
WRITE (6,1025) A,R, TIME
DO 500 J=N, 1, -STEP
  WRITE (6,2000) (U(I, J), I=1, N, STEP)
500 CONTINUE
WRITE (6,1050)
DO 510 J=N, 1, -STEP
  WRITE (6,2000) (V(I, J), I=1, N, STEP)
510 CONTINUE
```



```
WRITE (6,1000)
DO 525 J=N,1,-STEP
  WRITE (6,2000) (T(I,J),I=1,N,STEP)
```

```
525 CONTINUE
999 CONTINUE
STOP
```

```
C*****
C**          FORMAT STATEMENTS          **
```

```
C*****
```

```
1000  FORMAT ('0',//,30X,'TEMPERATURE VALUES',/)
1025  FORMAT ('1',22X,'A =',F5.2,5X,'R =',F6.1,5X,'TIME =',F6.3,/,30X,
X     'VELOCITY IN X DIRECTION',/)
1050  FORMAT ('0',//,30X,'VELOCITY IN Y DIRECTION',/)
2000  FORMAT (' ',11(E11.4,1X))
      END
```

The program uses three $N \times N$ arrays - $T(N,N)$, $U(N,N)$, and $V(N,N)$, where T is the array which represents the temperature function θ , U is the array for the velocity in the x-direction, and V is the array for the velocity in the y-direction. Since we want X and Y to be between 0 and 1, DX is defined as $\frac{1}{N}$. The time step Δt is represented by $DTIME$, and A and R are set to initial values. The program then establishes the initial and boundary conditions for the velocities and temperature. All velocities are 0 at time = 0. The initial temperature is chosen to be uniform throughout the medium and have a value T_0 . Therefore, $\theta = 0$ by the way we defined it, and hence the array T will be 0 at every interior point of the medium. Along the boundary, T is set to $\frac{1}{2}$ at $X = 0$ and to $-\frac{1}{2}$ at $X = 1$. All corner points are also initialized to $\frac{1}{2}$.

The program then performs a loop over a number of time steps, varying time by the value $DTIME$. The numerical approximations 11), 12), and 13) are used to calculate a new value for $T(I,J)$ for this current time step based on values of T from this time step and the previous time step. After finding a $T(I,J)$, approximations 10) and 15) are used to find new values for $V(I,J)$, and approximations 9) and 14) are used to find new values for $U(I,J)$. Each new value calculated is based on neighboring points, some of which are values from this time step and some of which are values of the previous time step. This process continues until all the array points have been calculated for the current time

step, after which the new array values for U, V, and T are printed. Only every $\frac{N-1}{10}$ th array point is printed due to page space limitations. Clearly, if N were 101, it would take 10 columns of ten numbers each to print just one row, whereas the flow changes can still be observed by printing every tenth array entry. After printing the array values, the time is incremented and new values are calculated for this new time step.

For this particular project, N was taken to be 21, thereby making $DX = \frac{1}{21}$. Time was varied from $TIME = 0$ to $TIME = 0.010$ by time step $DTIME = 0.001$. The patterns and changes in velocities and temperature were observed for the following values of A and R:

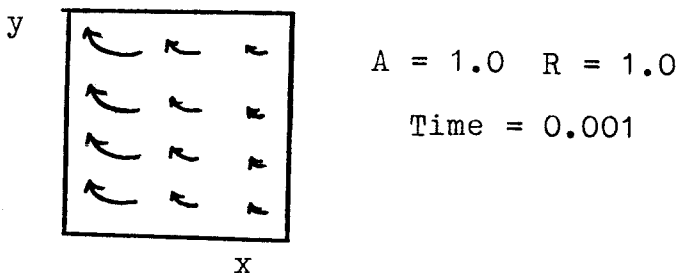
A = 0.1	R = 50	A = 0.5	R = 200
A = 0.2	R = 100	A = 1	R = 1
A = 0.2	R = 1000	A = 1	R = 10
A = 0.25	R = 1	A = 2	R = 1
A = 0.25	R = 50	A = 2	R = 10
A = 0.25	R = 100	A = 2	R = 100
A = 0.25	R = 400	A = 4	R = 1
A = $\frac{1}{3}$	R = 100	A = 4	R = 10
A = 0.5	R = 20	A = 4	R = 20
A = 0.5	R = 50		

The observations and conclusions follow.

OBSERVATIONS

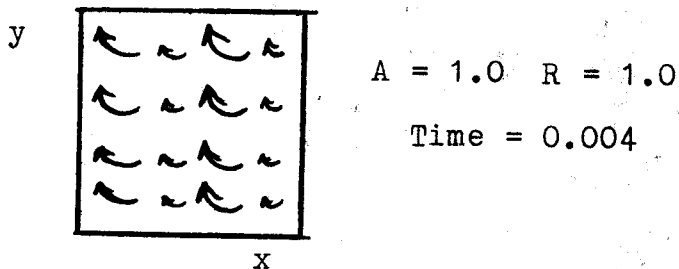
Computer output was obtained for 19 different pairs of A and R values. Only four will be discussed here: $A = 1$, $R = 1$; $A = 1$, $R = 10$; $A = \frac{1}{2}$, $R = 50$; and $A = \frac{1}{4}$, $R = 400$.

For $A = 1$, $R = 1$, we are dealing with a square medium. Examining the graphs for time = 0.001, we find that what we would logically expect to happen is happening - the temperature is slowly decreasing on a nice smooth curve, as is the velocity in the y-direction. The graph of the velocity in the x-direction begins at 0, then falls to its maximum value before gradually climbing to 0 at $X = 1$. Notice that the velocity in the x-direction is directed in the -x - direction, while the velocity V is directed in the +y - direction. This indicates that the convection current is flowing to the left and up, as shown in the diagram below.

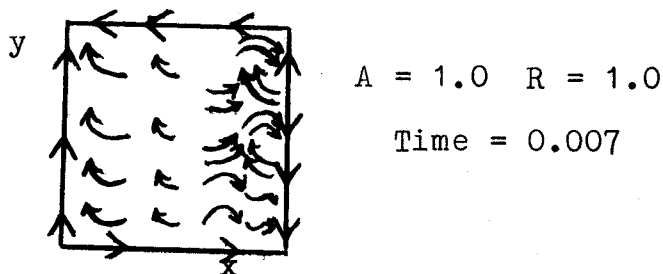


At time = 0.004, the graphs of $A = 1$ and $R = 1$ have changed as a swirl is beginning to develop in the velocity curves. The temperature values again show a smooth curve as we continue to heat the left side and cool the right side. The velocity curves follow the same pattern as they did for the previous time step until $X = 0.7$. After this point, the

velocity in the x-direction becomes very large in the negative direction, and the velocity in the y-direction attains a large positive value. This is shown in the following diagram.

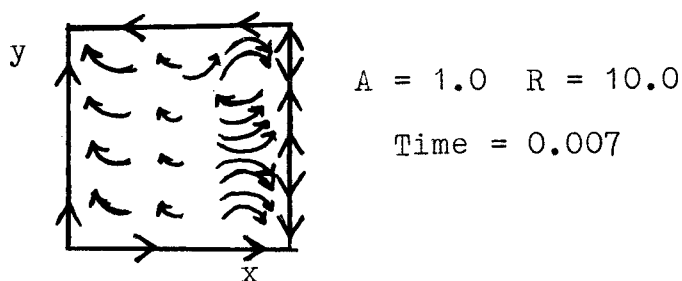


Examining the time step = 0.007 for $A = 1$ and $R = 1$, we find a swirl present in the convection currents at $X = 0.6 - 0.9$. As the fluid gets heated, it is clearly rising as witnessed by the previous velocity curves. The swirling occurs as the heated fluid is being cooled down. It is then cycled down and around and back toward the warm wall, where it is heated again. The following diagram might help to visualize what is actually happening here.



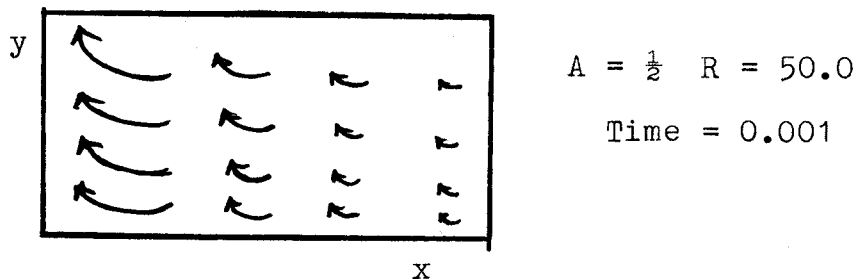
For the case when $A = 1$ and $R = 10$, we see the same results as for $A = 1$, $R = 1$. The only major difference between the two is the magnitude of the velocities. When $R = 10$, the velocities become larger, although the temperature values remain unchanged in magnitude. Again, at time = 0.007,

a swirling convection current is observed near the cold wall.

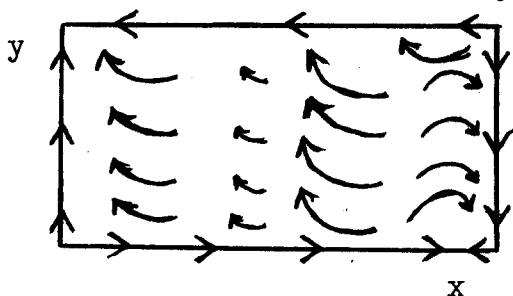


When $A = \frac{1}{2}$ and $R = 50$, the medium is twice as long as it is high. Because of this, the temperature values for the first few time steps are very small near the cold wall, and in effect the cold wall has more influence on the points $X = 0.7$ to $X = 1$ than does the warm wall. This can be seen by examining the computer output and the graphs for time = 0.006 through time = 0.010. The temperature values along the cold wall are attaining very large negative values.

The velocities for this case exhibit a quicker change over small distances. For example, the velocity V in the y -direction at time = 0.001 has a value of 25 at $X = 0$, $Y = 0.2$, yet at $X = 0.2$, $Y = 0.2$, V has a value of 0.028. Likewise, U , the velocity in the x -direction, reaches a maximum value very quickly in the first time step, then decreases drastically in magnitude. However, although the changes are quick, the patterns for the velocities at time = 0.001 remain essentially unchanged.



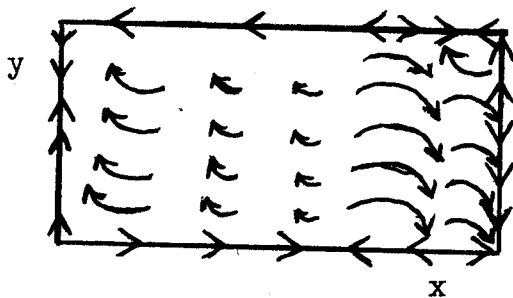
When time = 0.004 for $A = \frac{1}{2}$ and $R = 50$, some swirling currents are already present near the cold wall. The magnitudes of the velocities near the swirling currents become quite large in comparison with the previous graphs examined. The effect that these swirling currents have on the temperature values is clear from the graph as the temperature curve closely follows the curve for velocity in the y-direction.



$$A = \frac{1}{2}, R = 50.0$$

$$\text{Time} = 0.004$$

At time = 0.007, the swirling convection currents become more pronounced for $A = \frac{1}{2}$, $R = 50$. At $X = 0.6$ through $X = 1$, the current is flowing in the $+x$ - direction and the $-y$ - direction. The magnitude of the velocities is very large (approximately 10^5) for the swirling currents. The temperature curve again follows the pattern of the curve for V . The temperature values also have very large magnitudes (10^4), and they are negative values affected by the changing currents near the cold wall.



$$A = \frac{1}{2}, R = 50.0$$

$$\text{Time} = 0.007$$

The fourth case for which computer output is presented, the case when $A = \frac{1}{4}$ and $R = 400$, is included merely to show the extreme range of values observed for varying values of A and R . Notice that for time = 0.001, the values are very small ($10^{-4} - 10^{-25}$), yet at time = 0.007, values of 10^{52} and 10^{56} are present. This large jump in values may be caused by the choices of A and R . Also, the explicit finite differences method itself may not be stable for this type of problem or these choices of A and R .

CONCLUSIONS

The explicit finite differences method proved to be a good method to use for this problem for our choices of N , DX , $DTIME$, $A = 1$, and $R = 1$ and 10 . The results and values obtained were, for the most part, concurrent with what was logically expected - smooth, decreasing temperature curves, essentially smooth and stable velocity curves, and the swirling convection currents. Further examination of the output for $A = 1$ and $R = 1$ reveals some swirling currents which are present along the entire length of the medium for time = 0.008, 0.009, and 0.010. Similarly, swirling currents appear along the entire medium for $R = 10$ over time = 0.008, 0.009, and 0.010. These swirling currents illustrate the fluid flow as it cycles through the medium after being heated and then cooled.

Although the program worked well for $A = 1$ and $R = 1$ and 10 , the program abended for many of the other choices of A and R which were tried. Much like the case $A = \frac{1}{4}$ and $R =$

400, the numbers grew very big very quickly for large A values such as 2 and 4, and for large R values such as $R = 50, 100, 400,$ and 1000. Overflow errors were common after just four or five time steps. Similarly, small values of A caused problems because the calculated values became too small. Values of $A = \frac{1}{3}, \frac{1}{4}, \frac{1}{5},$ and $\frac{1}{10}$ paired with smaller R values such as 1, 2, and 10 received underflow errors after six or seven time steps.

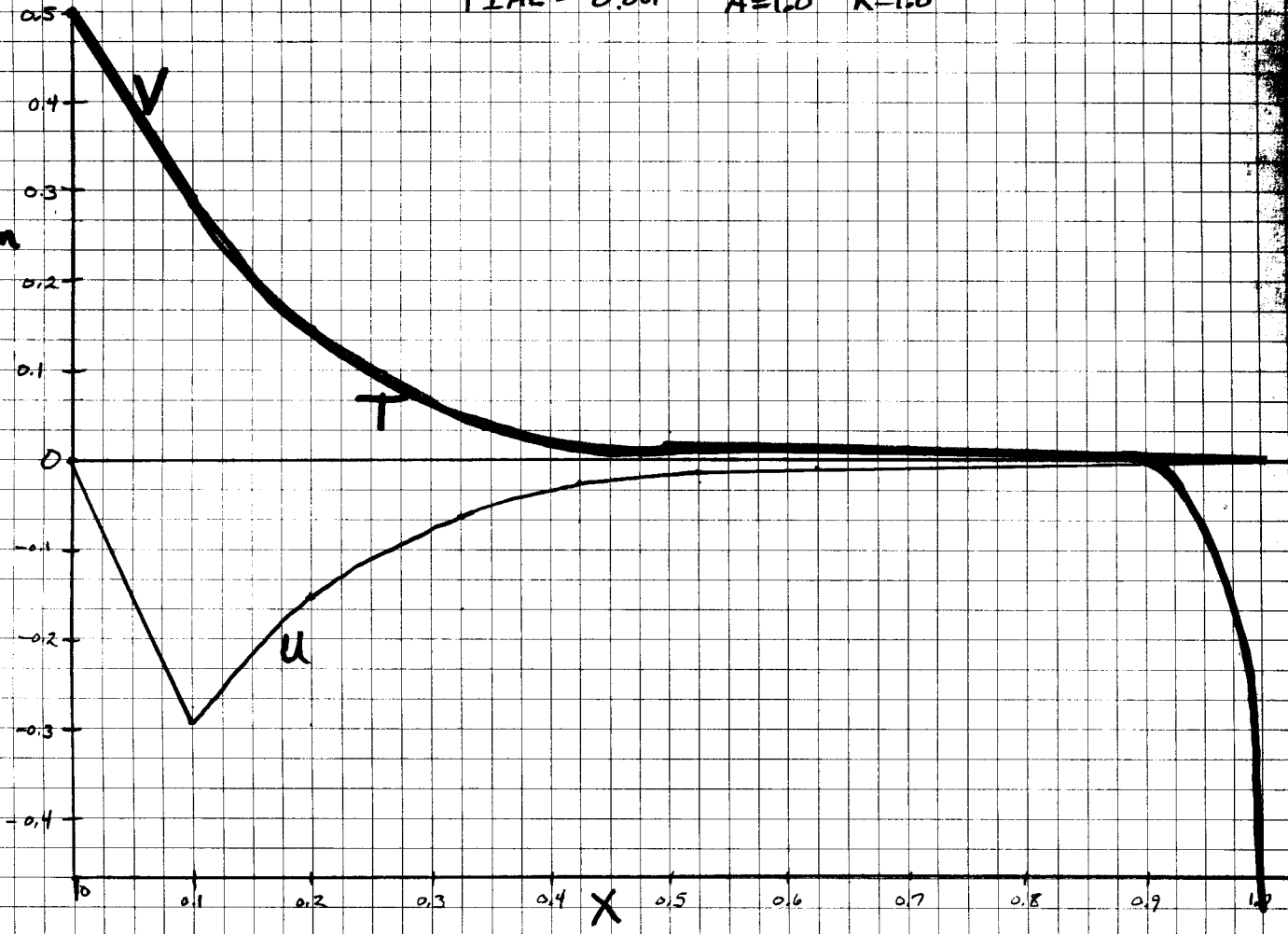
In the same manner, the program worked well for $N = 21,$ $DX = \frac{1}{21},$ and $DTIME = 0.001.$ However, larger values of N such as 31, 51, and 101 provided programs abends as the arrays values that were calculated grew very quickly and caused overflow errors, usually within the first time step. To compensate, smaller values of DTIME were taken. However, as an undergraduate using the university's computing facilities, the program was not allotted a large amount of CPU time as it would slow the system and prevent other students and faculty from using the computer effectively. Therefore, most of the smaller values of DTIME tried resulted in time exceeded errors before completing the first few time steps.

The overflow errors that occurred so frequently due to changes in N, DX, DTIME, A, and R tend to suggest that the explicit finite difference method is unstable for this problem. If more CPU time were available, and if time permits, a strict stability analysis could be performed to determine for exactly which values make this method stable. But based solely on the performance of the method for varying values of N, DX, DTIME, A, and R, the conclusion must be that a higher-order

method needs to be implemented to solve this problem more correctly. With a higher-order method, the error in the calculated values would be less than the $O(h^2)$ of the explicit finite differences method. Therefore, the calculated values would be more accurate and the method would become more stable for this problem. The results obtained by implementing a higher-order method would not be expected to change appreciably from the present results for $A = 1$ and $R = 1$ and 10 . The swirling convective currents may become more pronounced and prominent, but I would expect the same type of smooth, slowly decreasing temperature curve as obtained using the present explicit finite differences method.

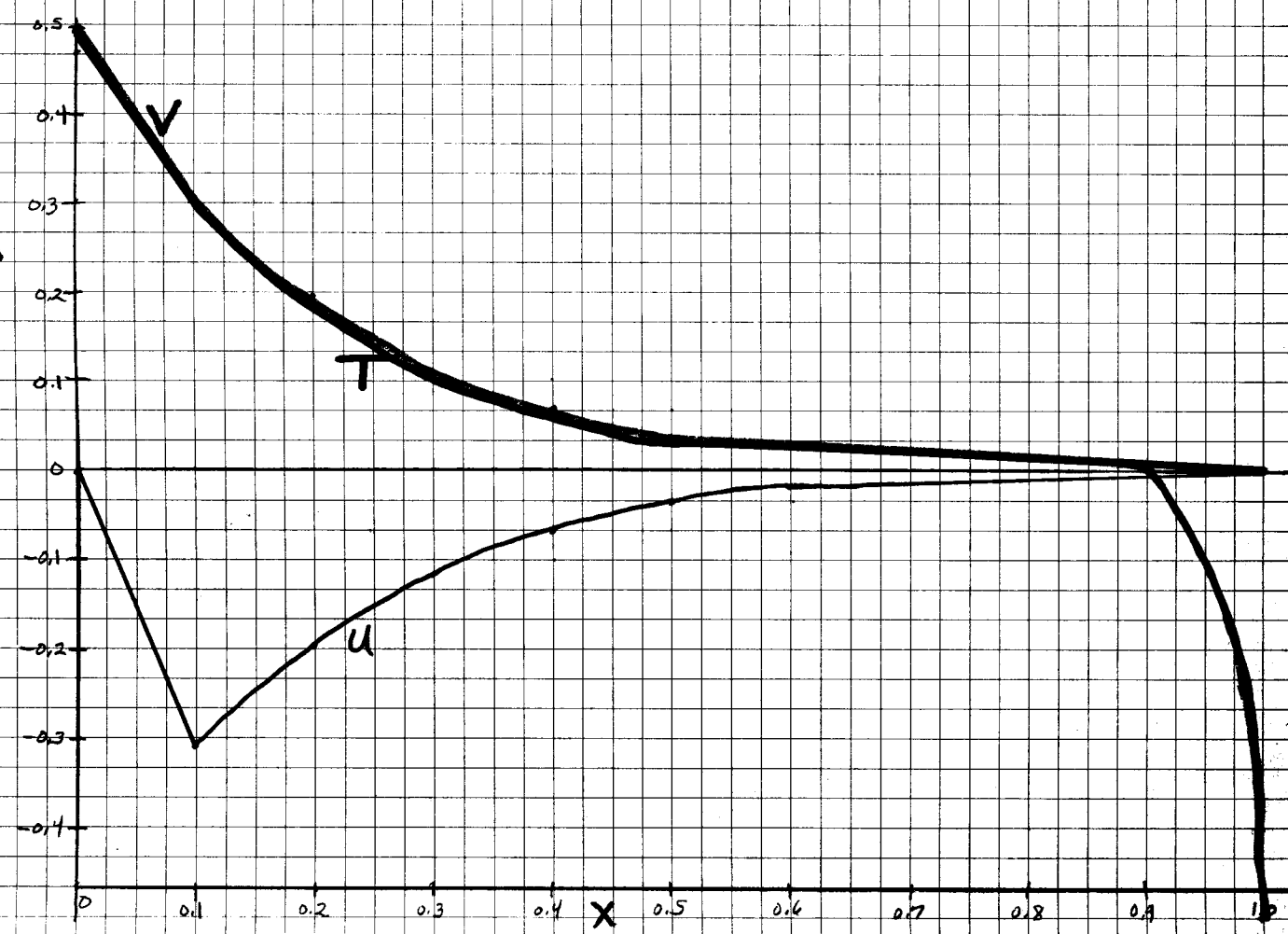
TIME = 0.001 A=1.0 R=1.0

$\gamma = 0.2$
= Black
 $\gamma = \text{Green}$
 $T = \text{Red}$



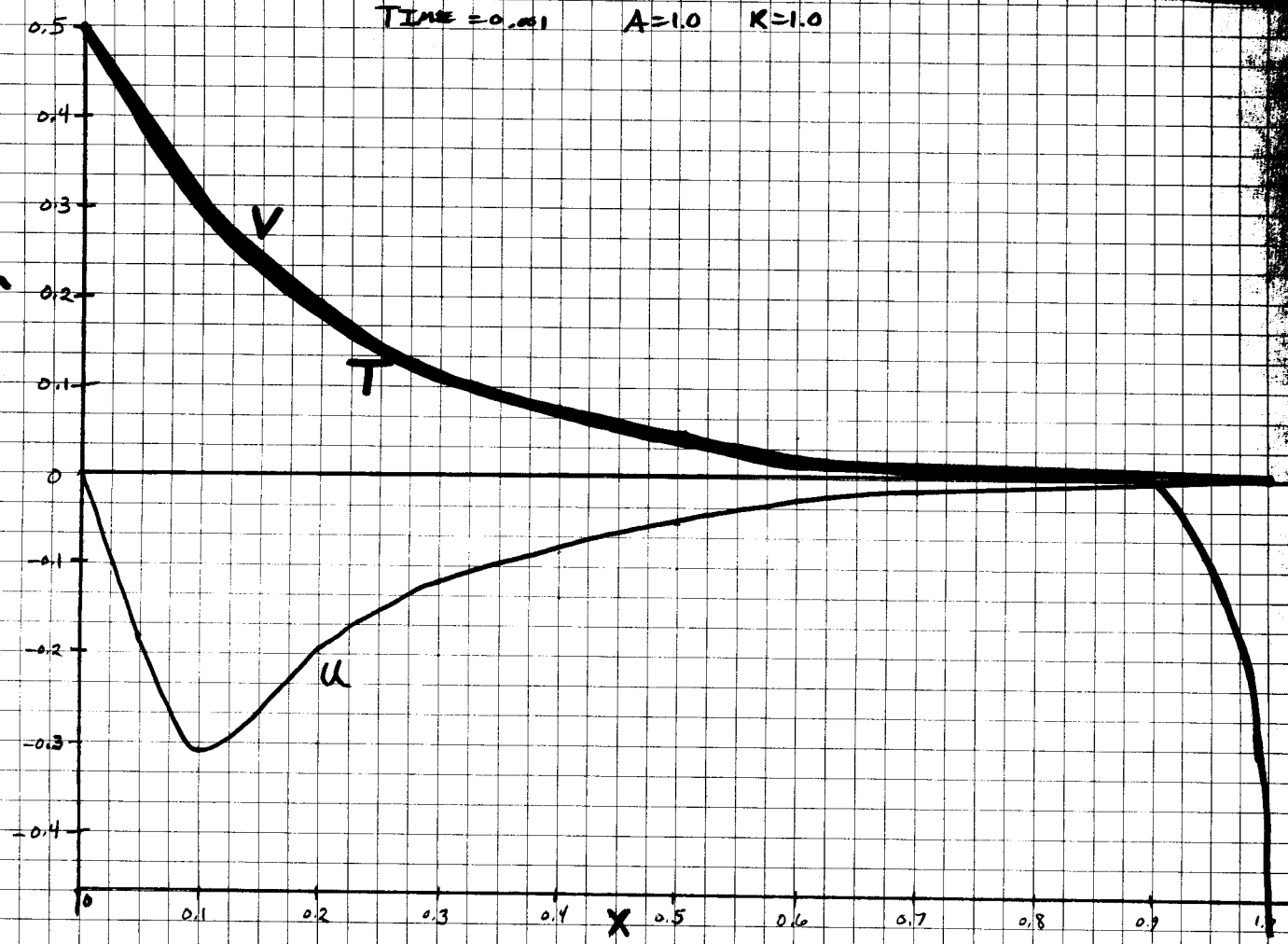
TIME = 0.001 A=1.0 R=1.0

$\gamma = 0.5$
 $u = \text{Black}$
 $\gamma = \text{Green}$
 $T = \text{Red}$



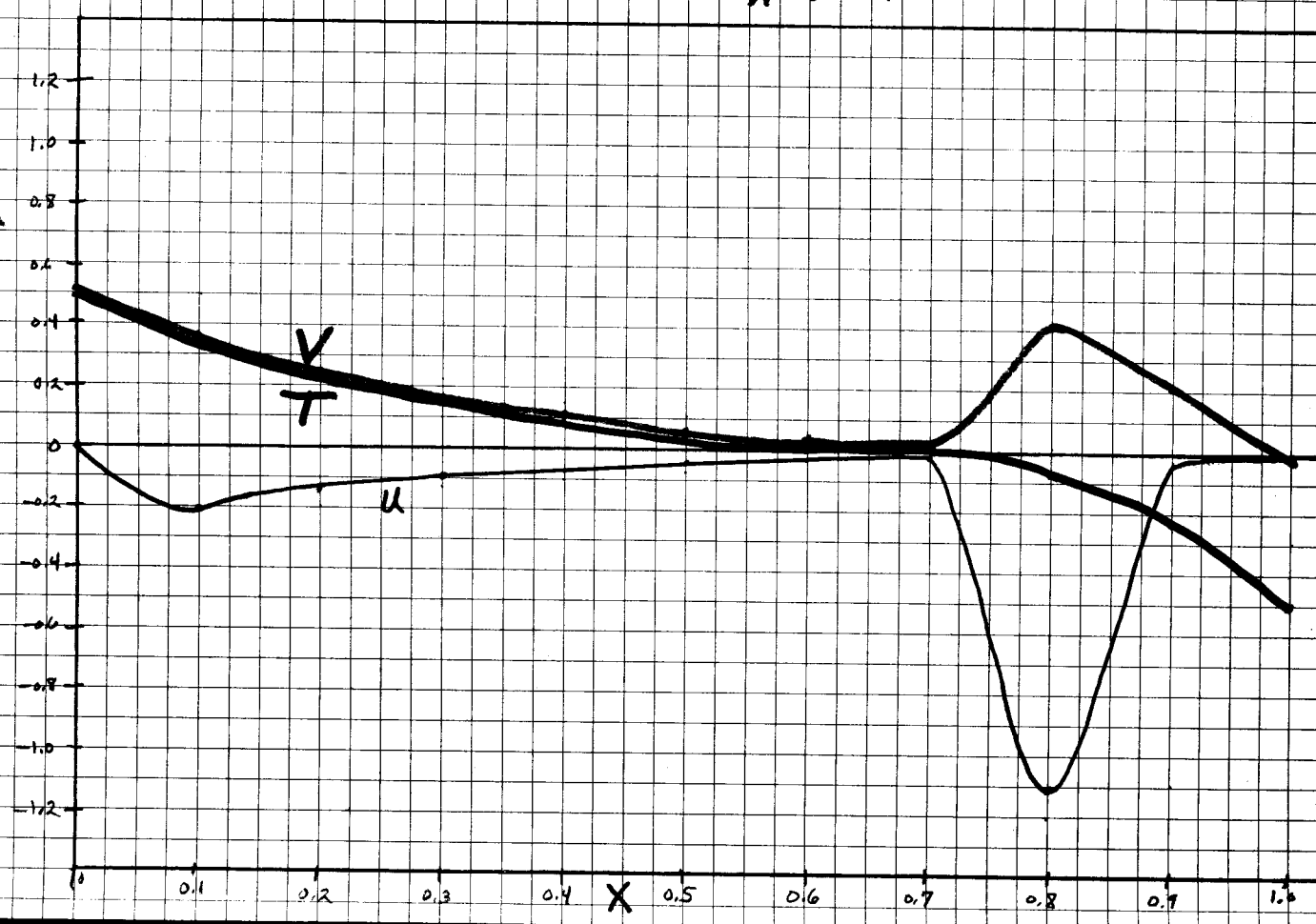
TIME = 0.001 A=1.0 R=1.0

$y = 0.8$
u = Black
v = Green
T = Red



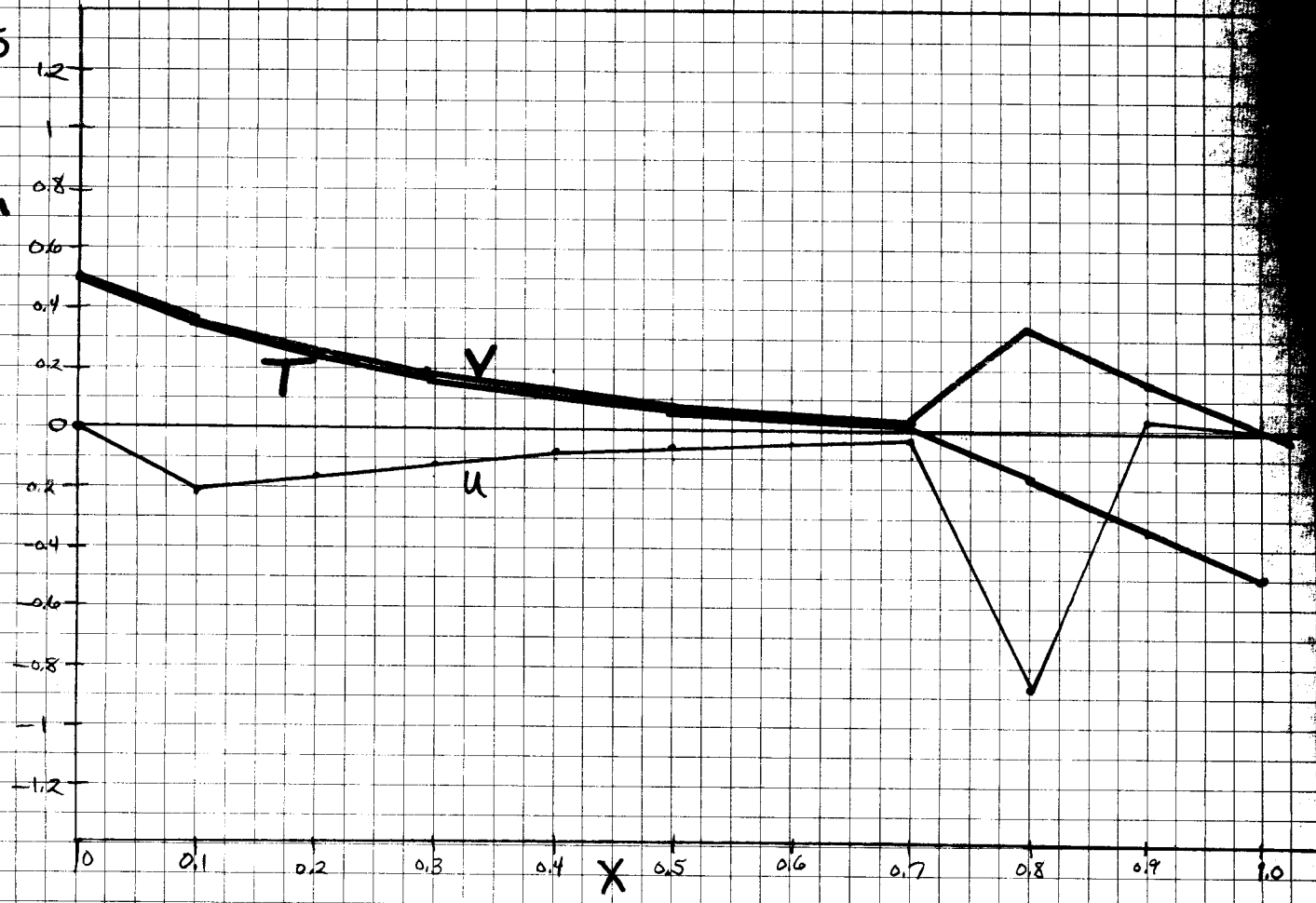
TIME = 0.004 A=1.0 R=1.0

$y = 0.2$
u = Black
v = Green
T = Red



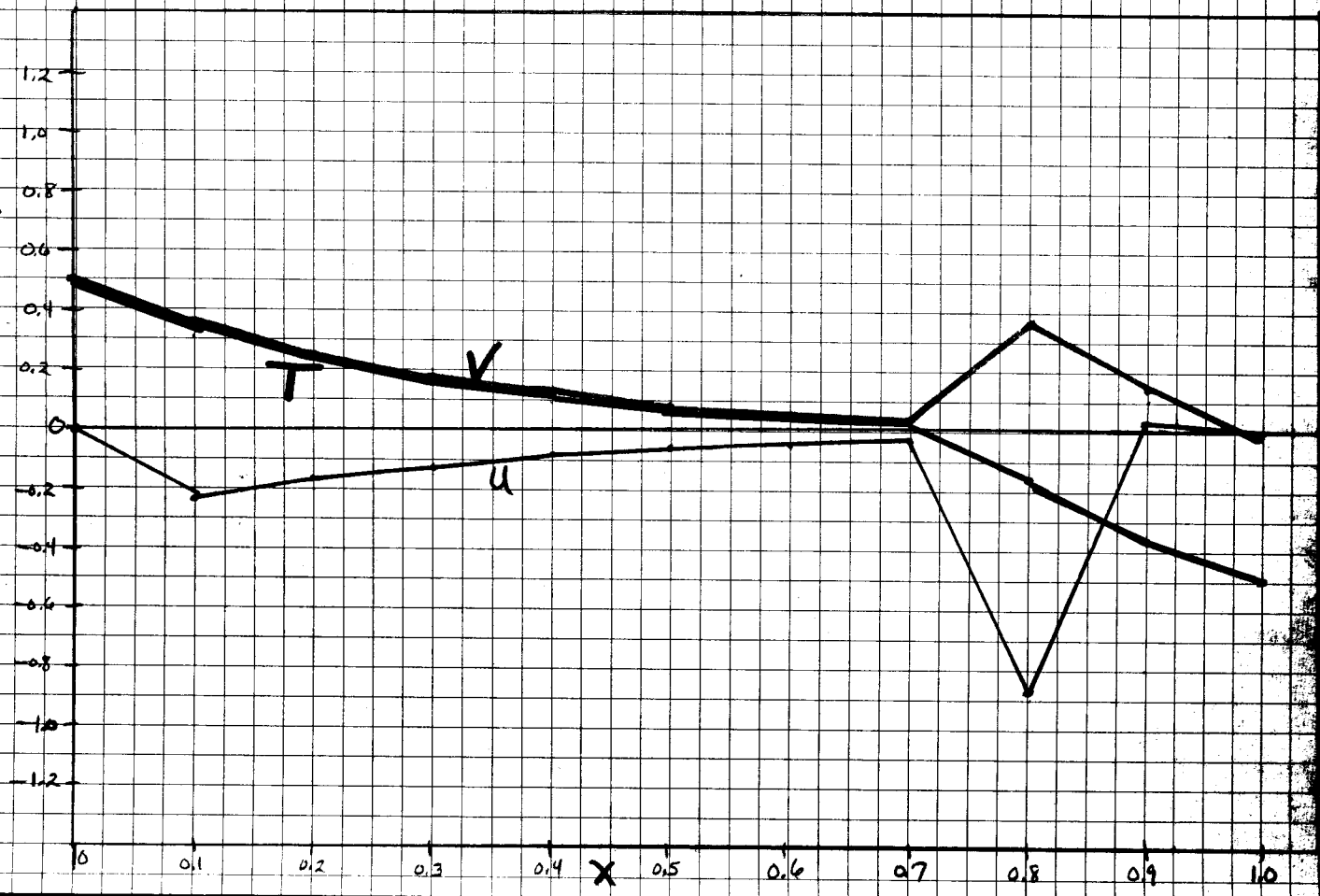
TIME = 0.004 A=1.0 R=1.0

$\gamma = 0.5$
 $u = \text{Black}$
 $\gamma = \text{Green}$
 $T = \text{Red}$



TIME = 0.004 A=1.0 R=1.0

$\gamma = 0.8$
 $u = \text{Black}$
 $\gamma = \text{Green}$
 $T = \text{Red}$



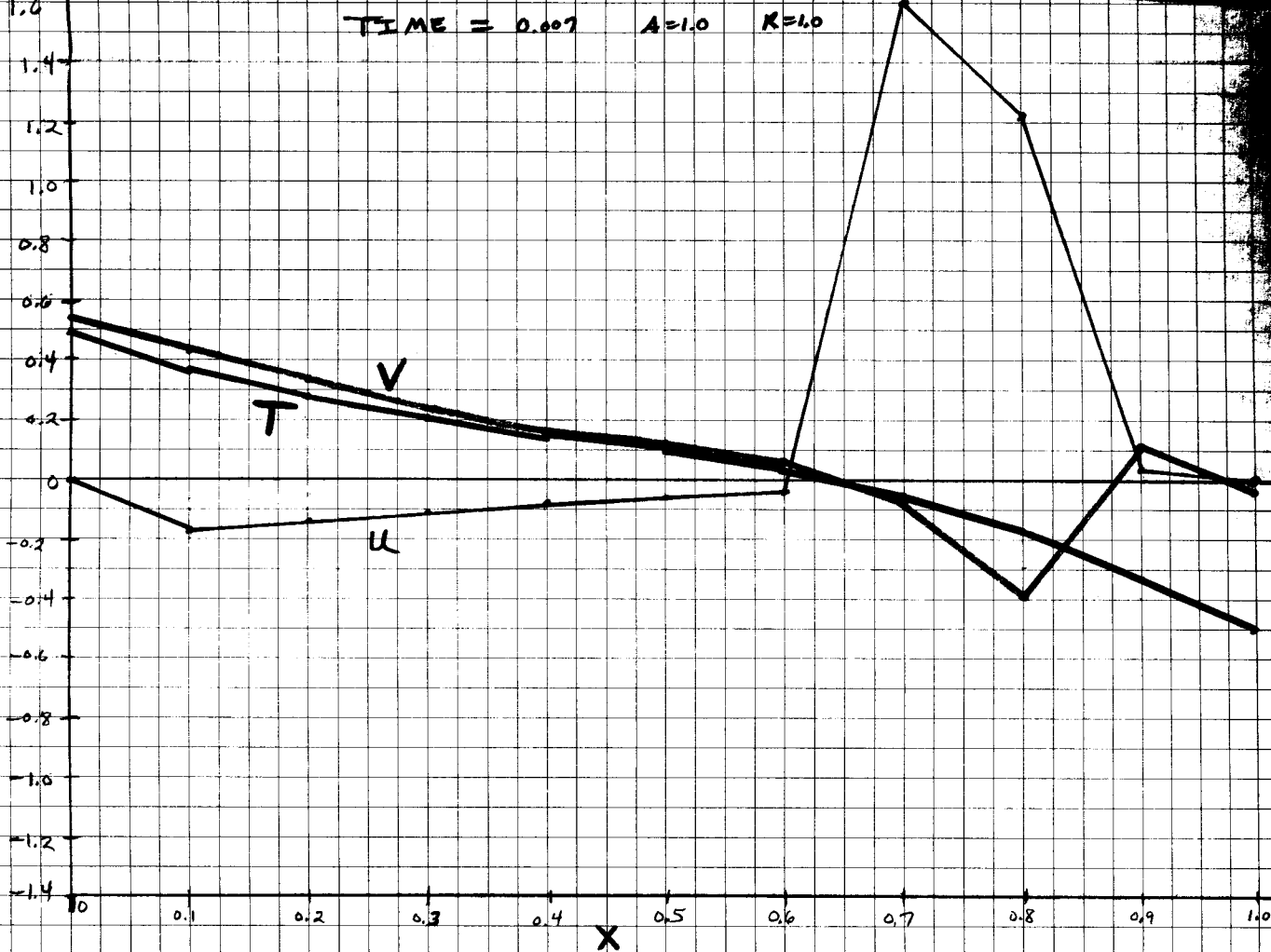
TIME = 0.007 A=1.0 K=1.0

$\gamma = 0.2$

u = Black

v = Green

T = Red



TIME = 0.007 A=1.0 K=1.0

$\gamma = 0.5$

u = Black

v = Green

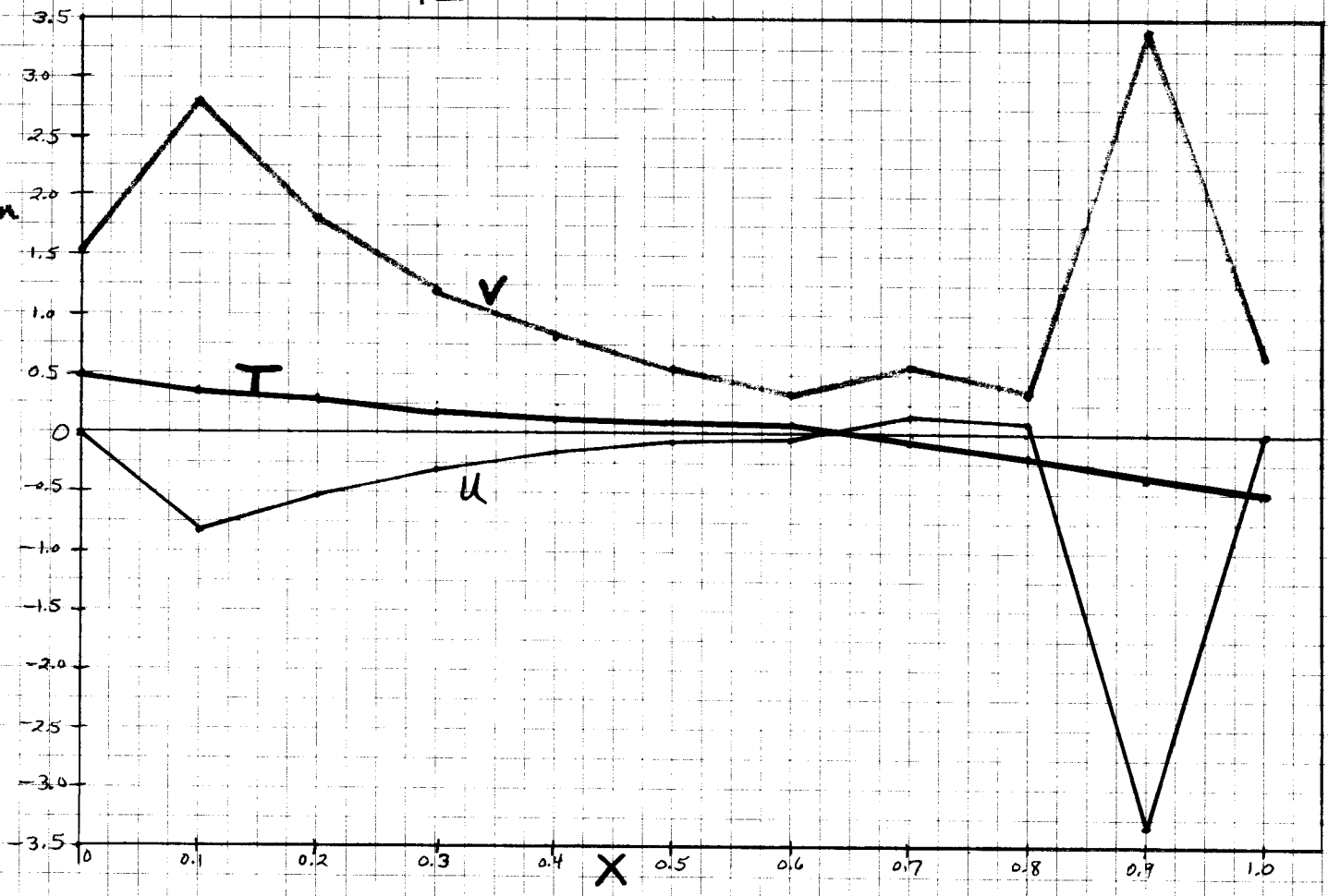
T = Red



TIME = 0.007 A=1.0 K=1.0

$\gamma = 0.8$

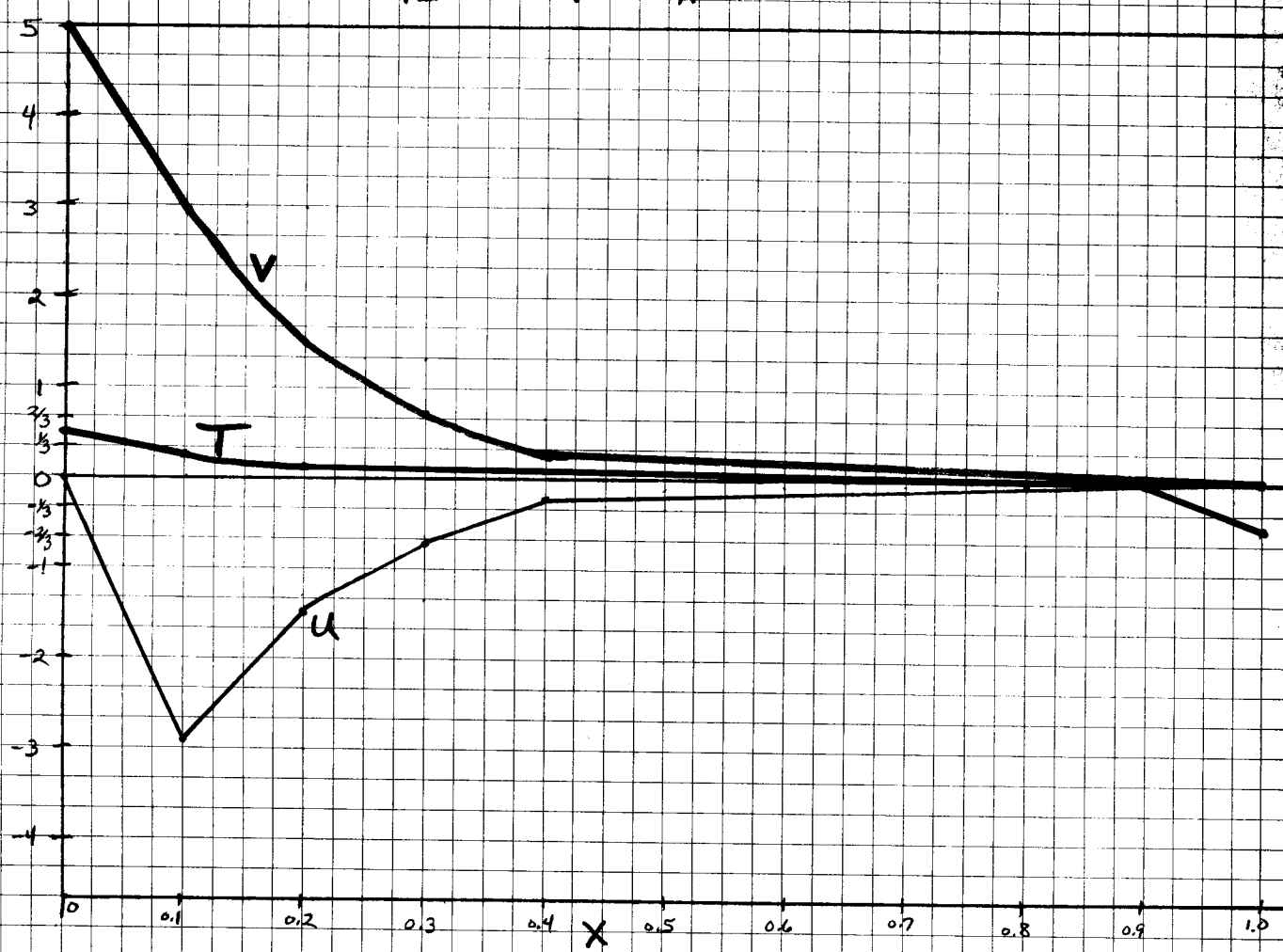
$\downarrow = \text{Black}$
 $\rightarrow = \text{Green}$
 $T = \text{Red}$



TIME = 0.001

A=1.0 R=10.0

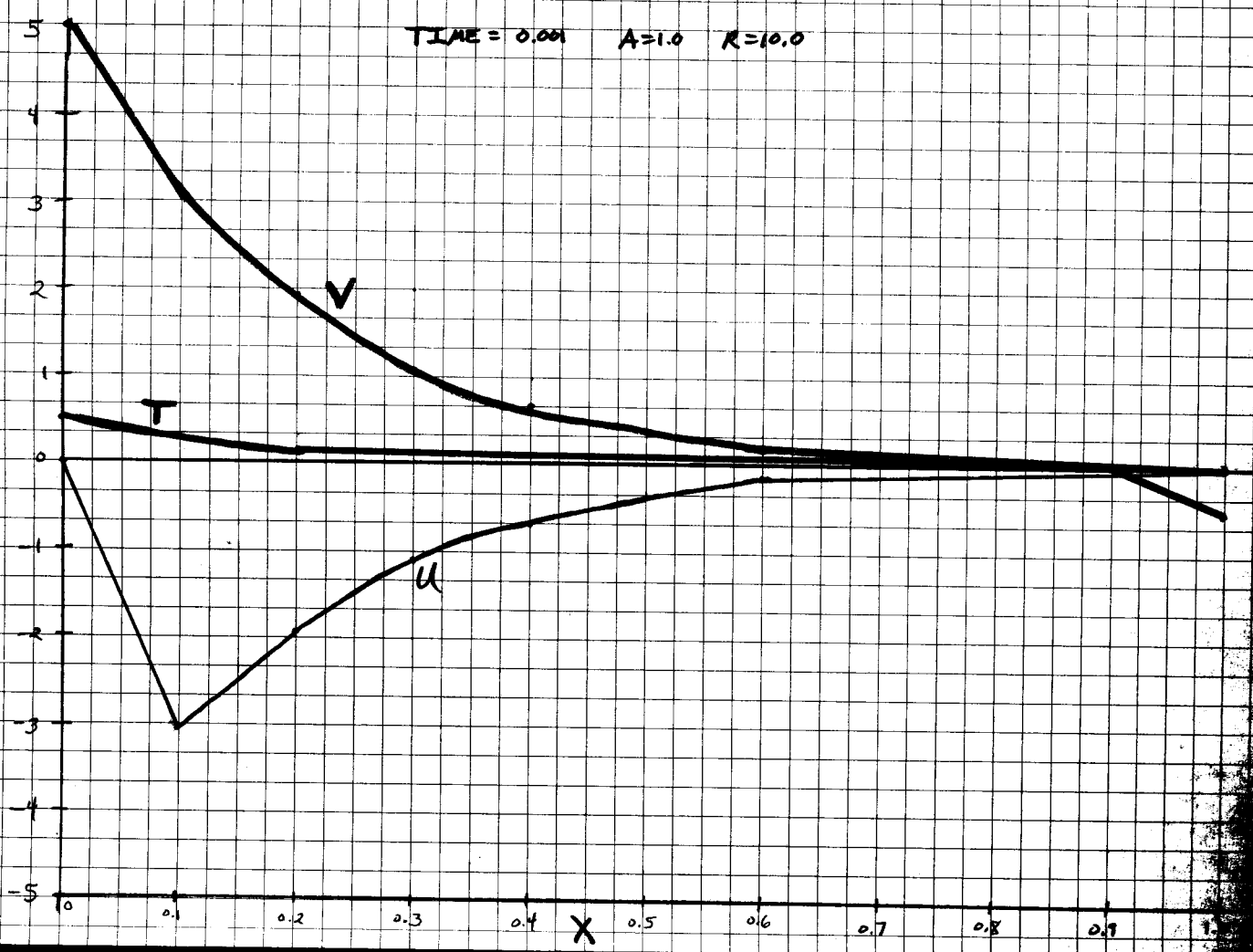
$\gamma = 0.2$
u = Black
v = Green
T = Red



$\gamma = 0.5$
u = Black
v = Green
T = Red

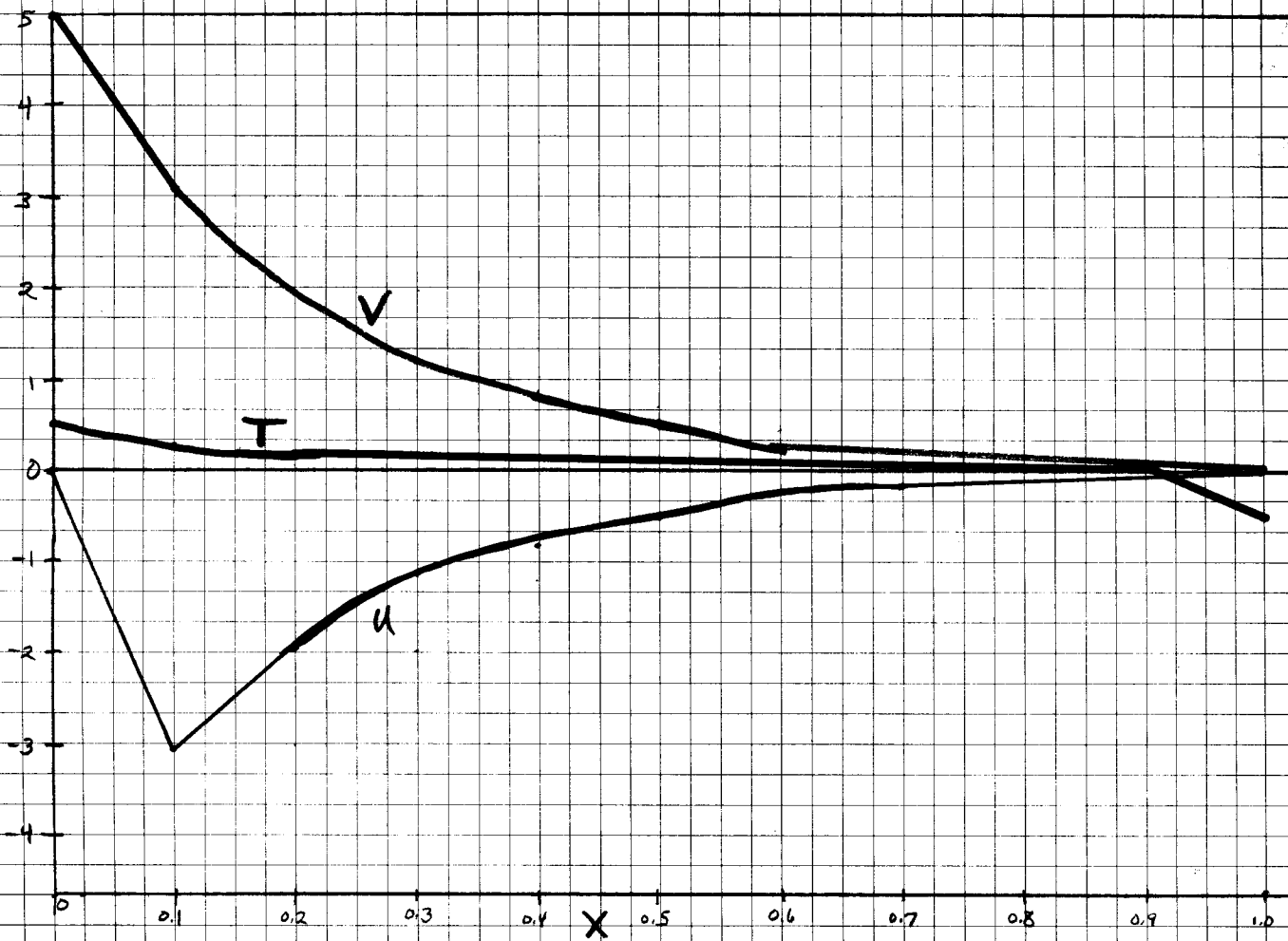
TIME = 0.001

A=1.0 R=10.0



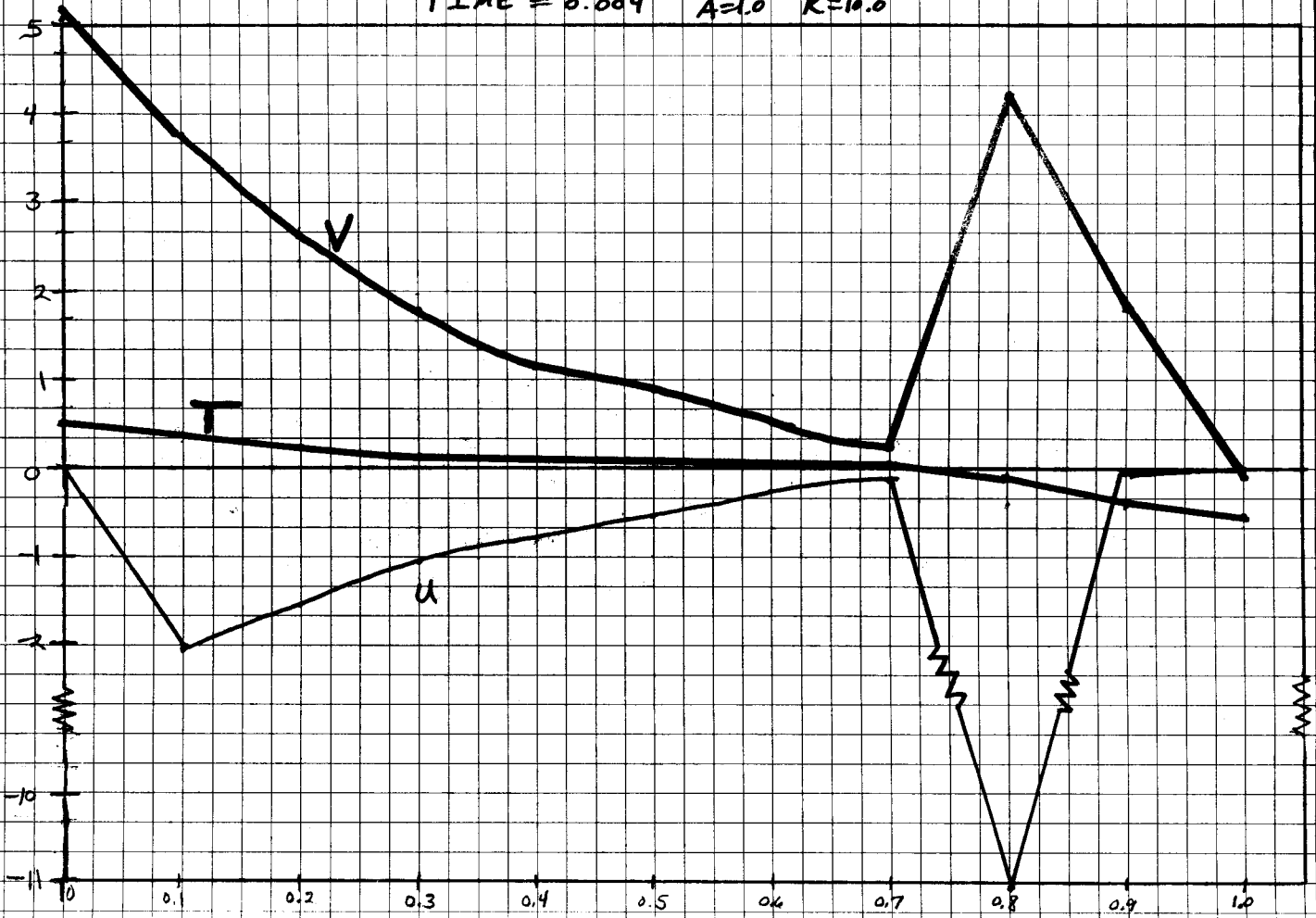
TIME = 0.001 A=1.0 R=10.0

$\gamma = 0.8$
l = Black
 $\gamma = \text{Green}$
T = Red



TIME = 0.004 A=1.0 R=10.0

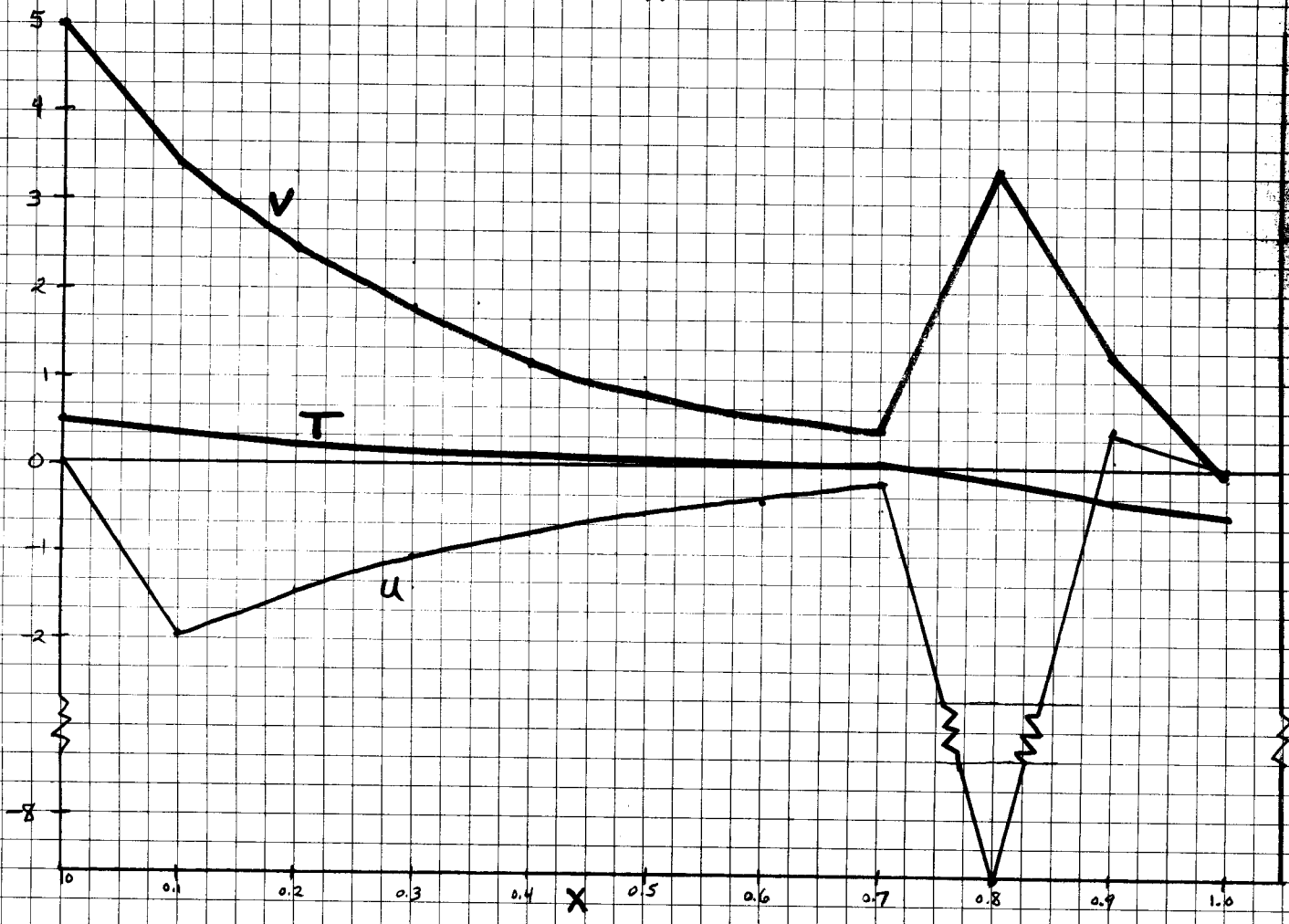
$\gamma = 0.2$
u = Black
 $\gamma = \text{Green}$
T = Red



TIME = 0.004

A=10 R=10.0

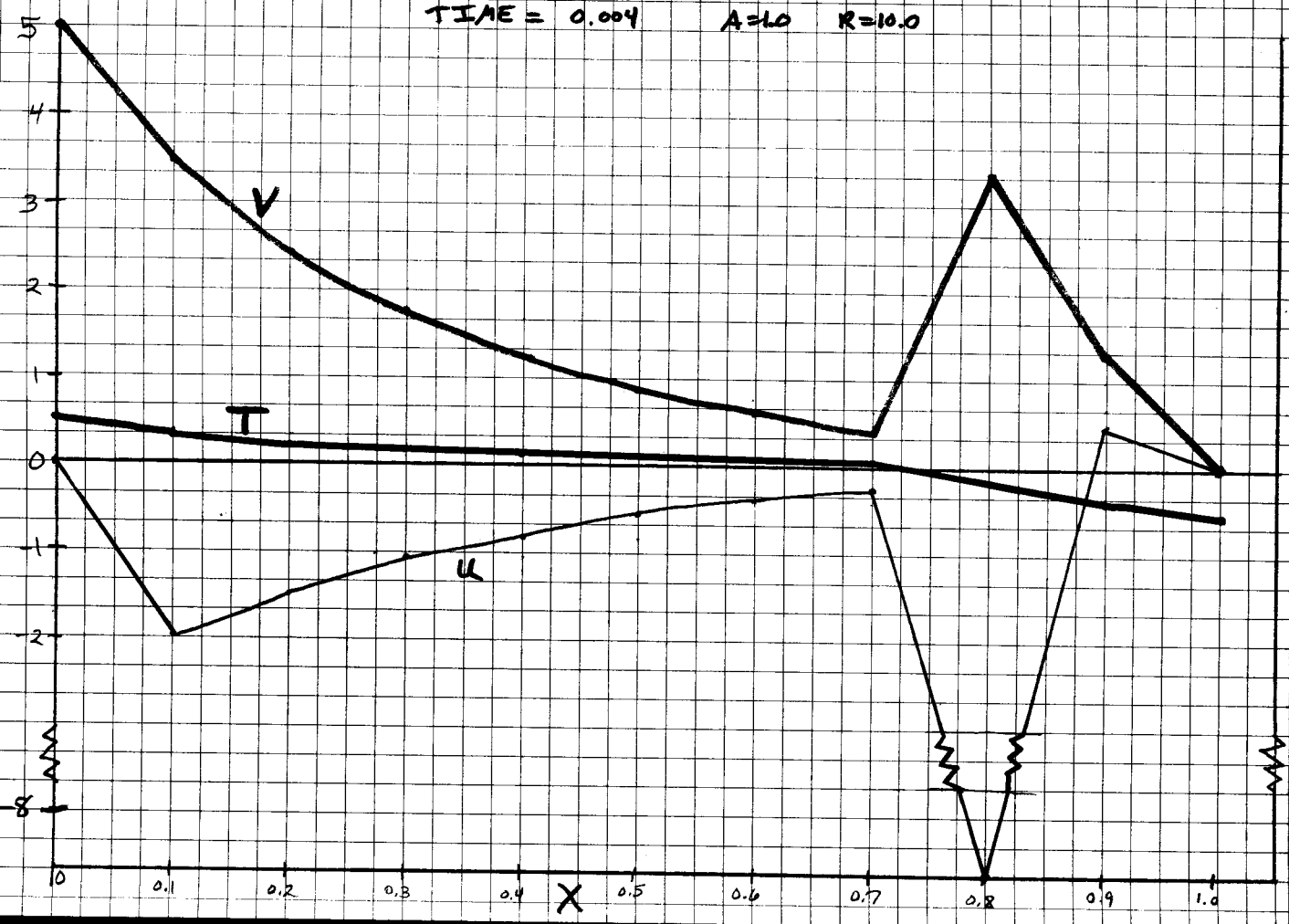
$y = 0.5$
= Black
v = Green
T = Red



TIME = 0.004

A=10 R=10.0

$y = 0.8$
= Black
v = Green
T = Red



TIME = 0.007 A=1.0 R=10.0

$\gamma = 0.2$
u = Black
v = Green
10xT = Red



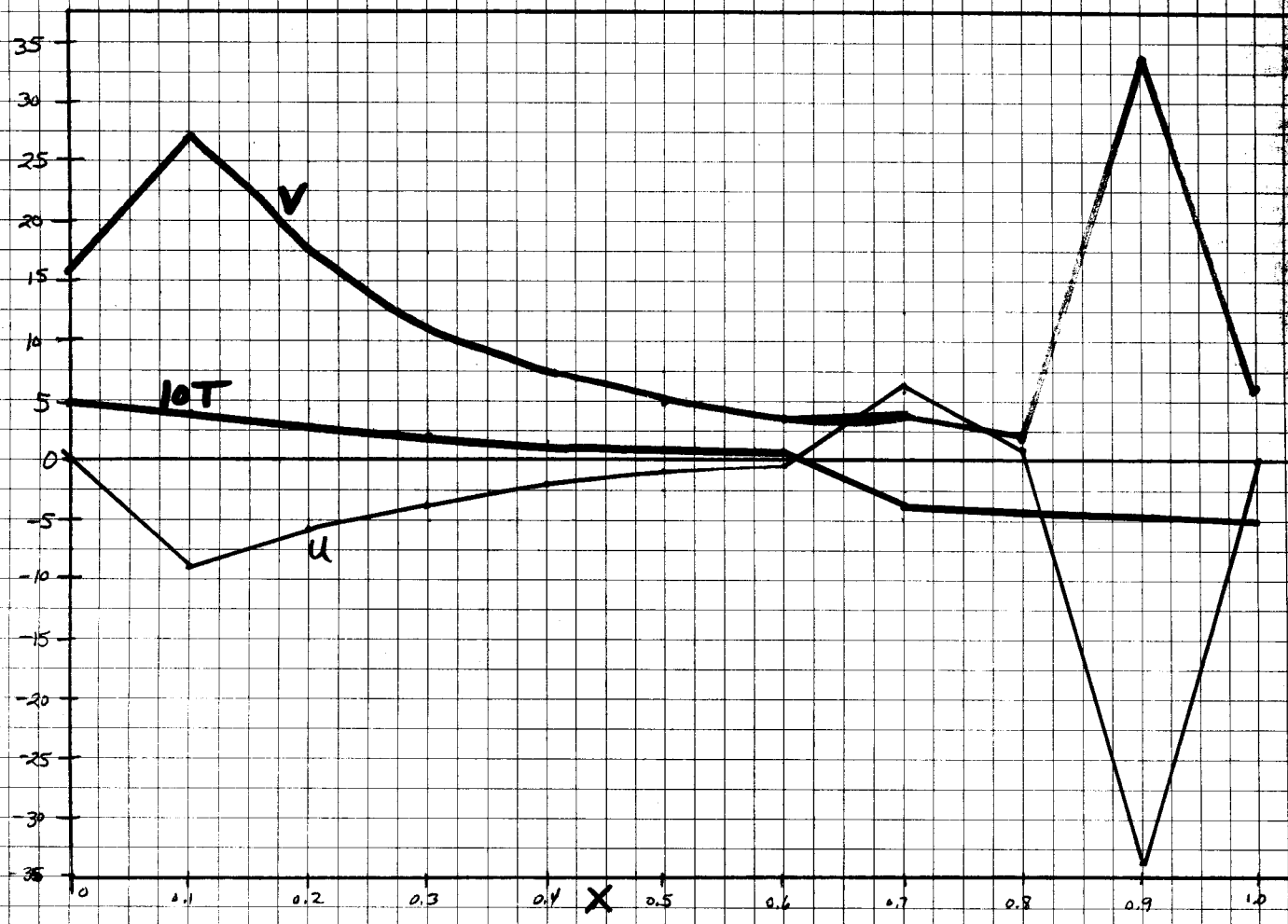
TIME = 0.007 A=1.0 R=10.0

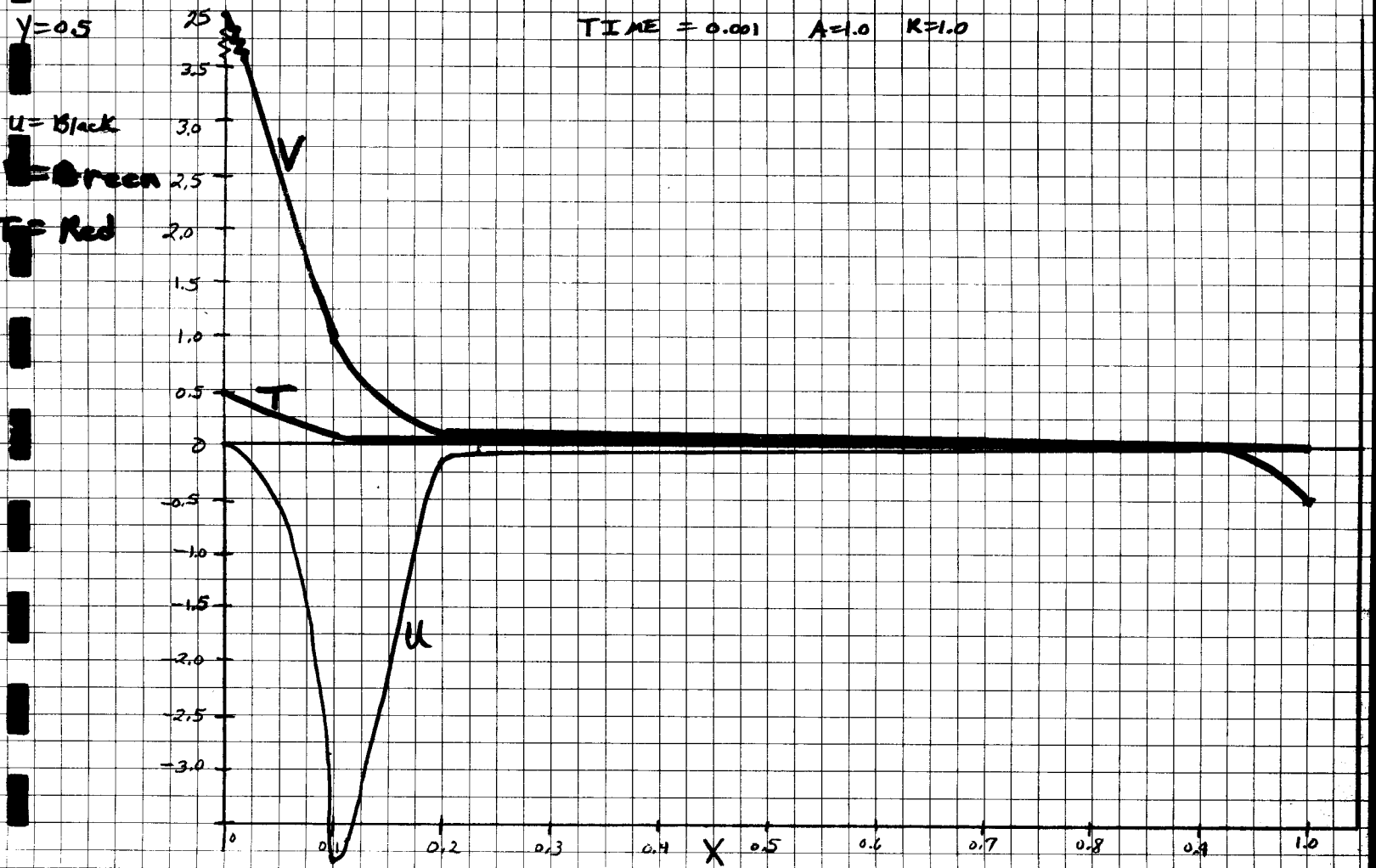
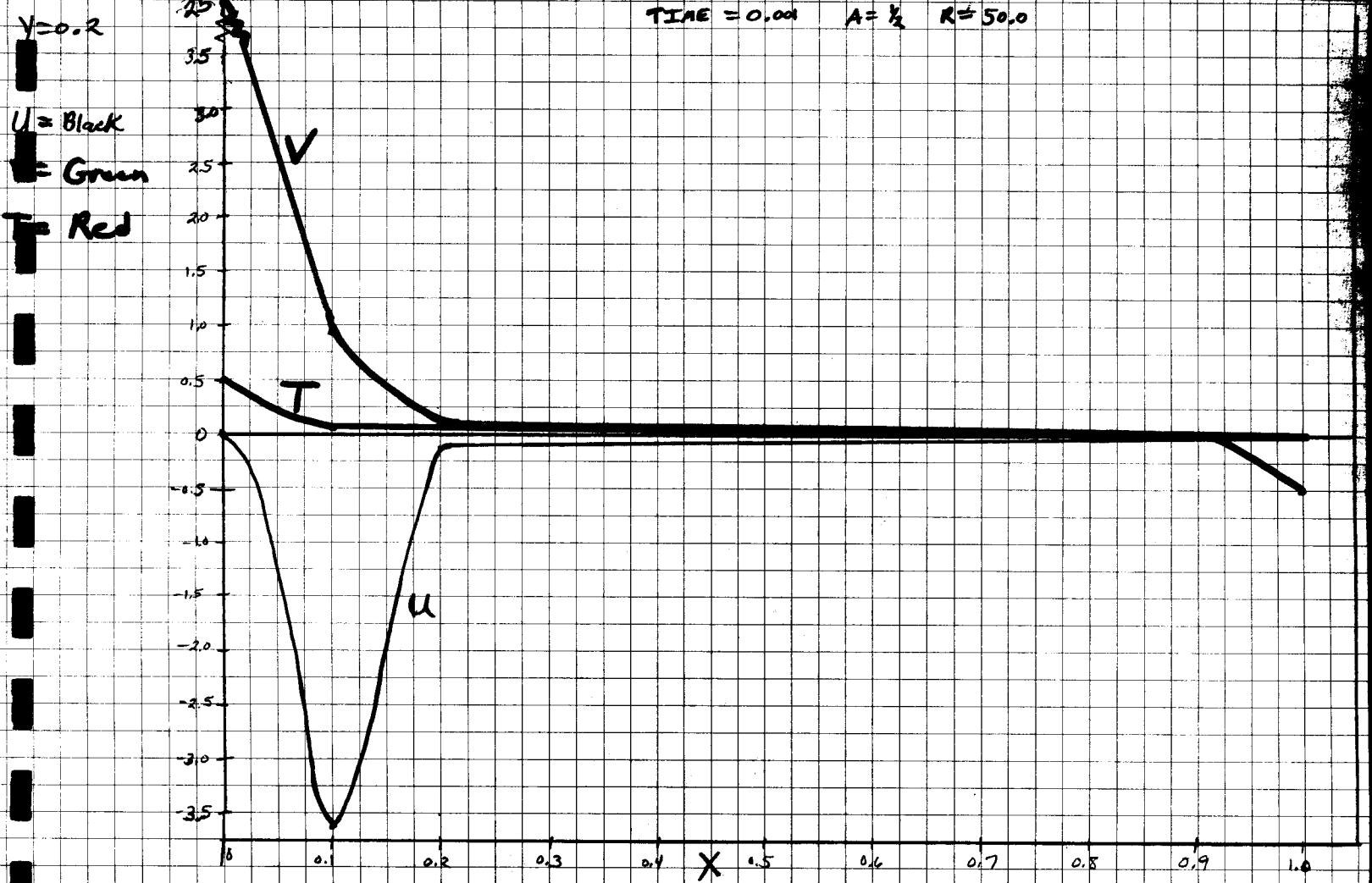
$\gamma = 0.5$
u = Black
v = Green
T = Red



TIME = 0.007 A=1.0 R=10.0

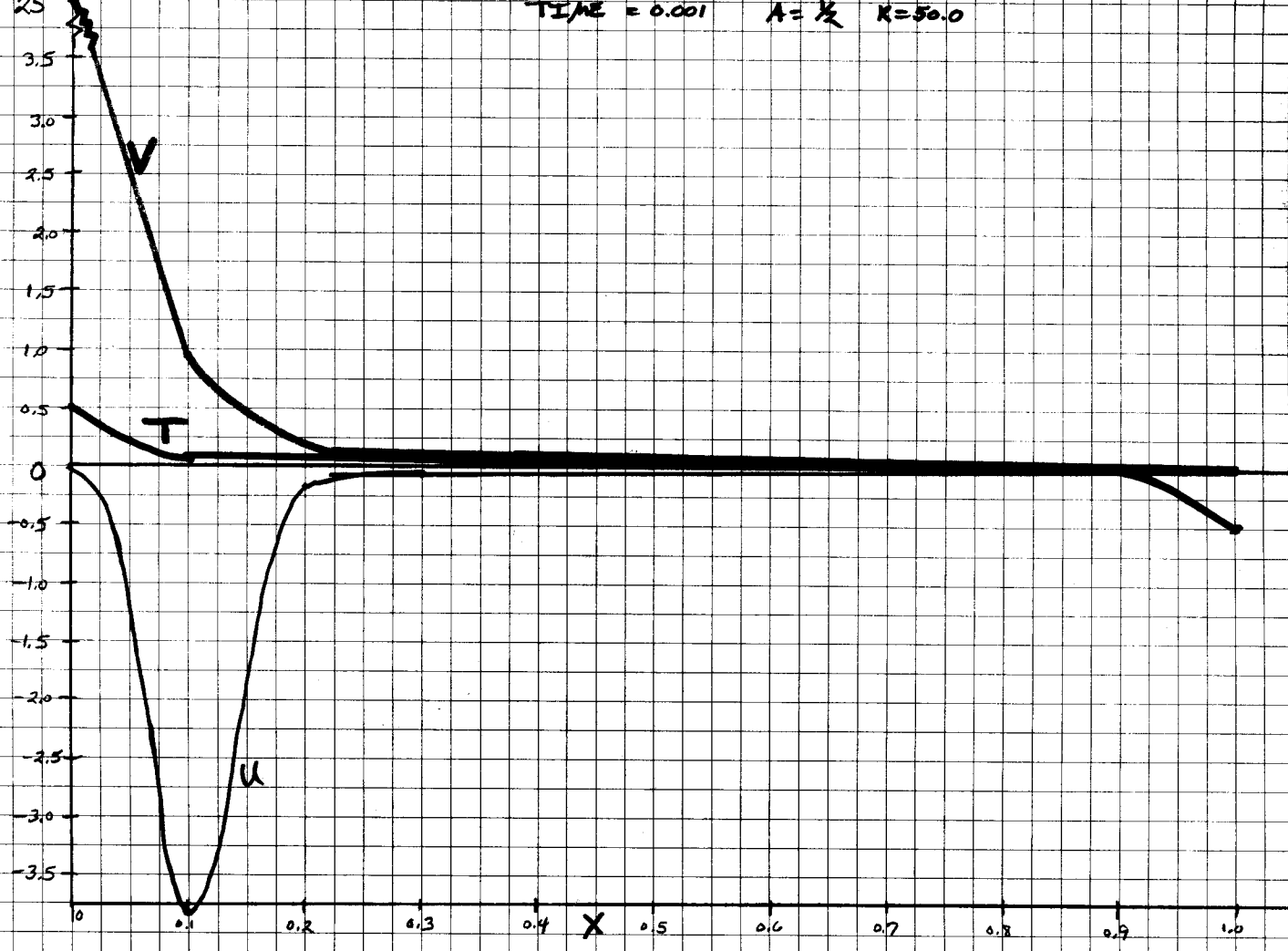
$\gamma = 0.8$
I = Black
V = Green
T = Red





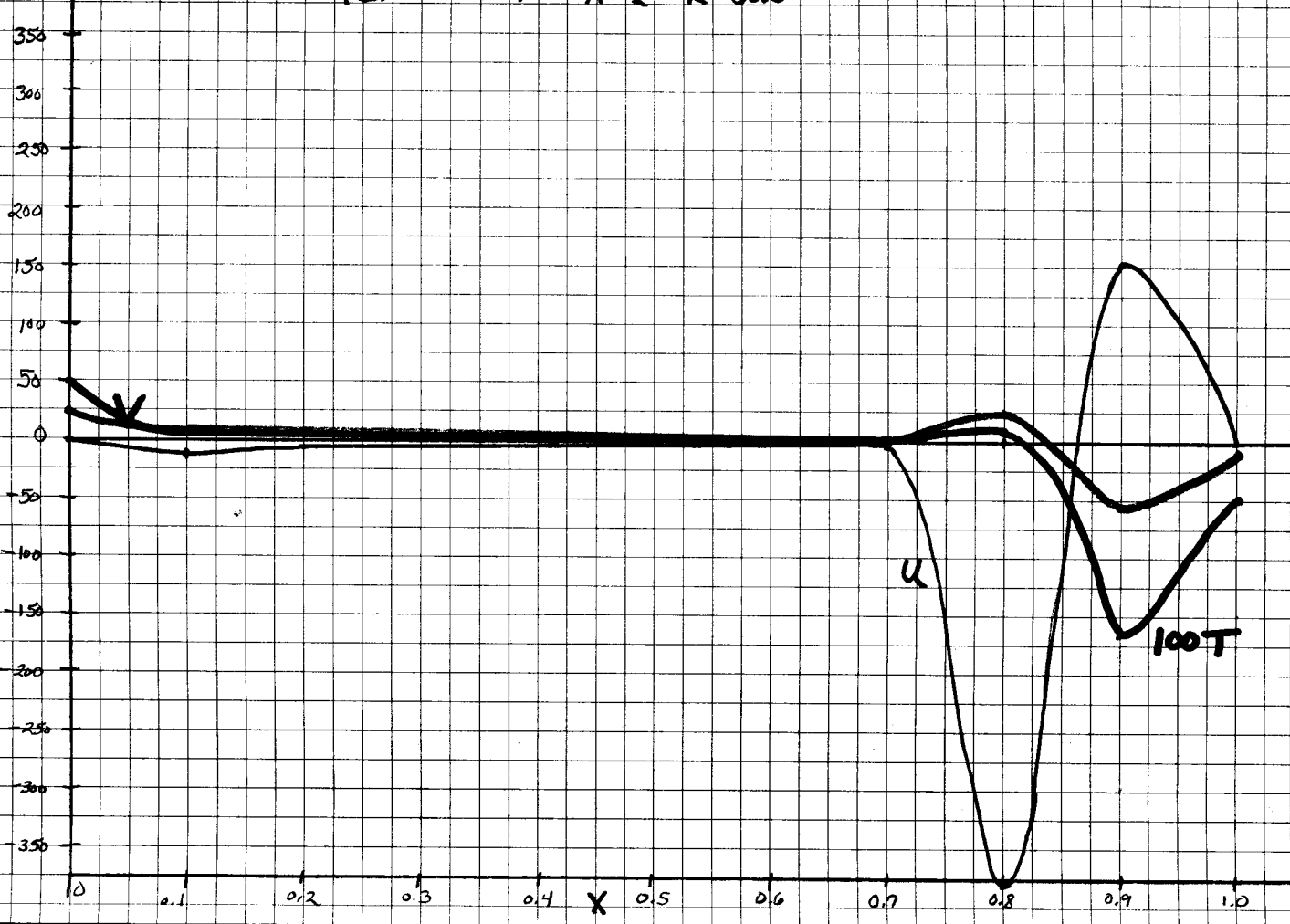
TIME = 0.001 A = 1/2 R = 50.0

V = 0.8
= Black
= Green
T = Red

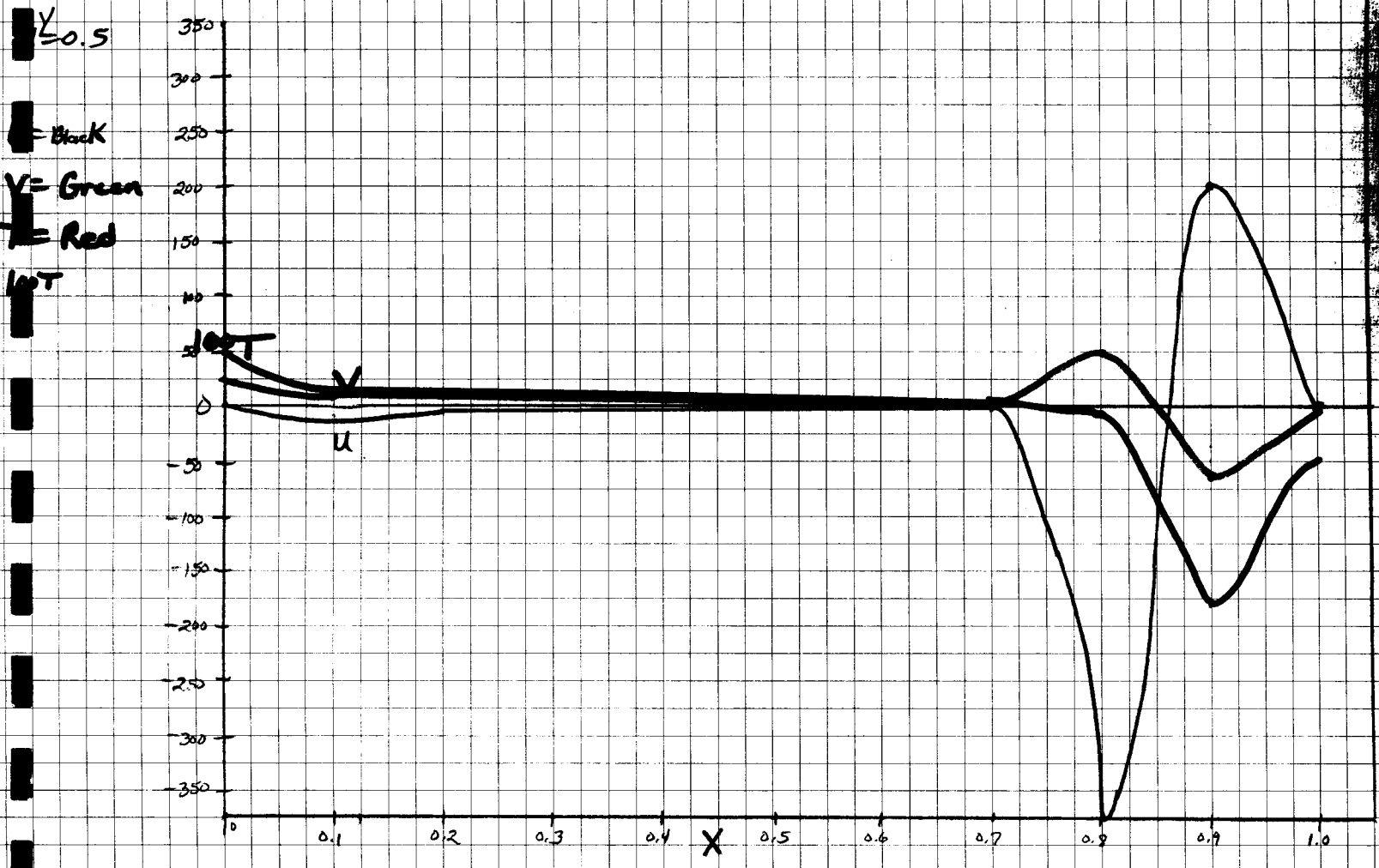


TIME = 0.004 A = 1/2 R = 50.0

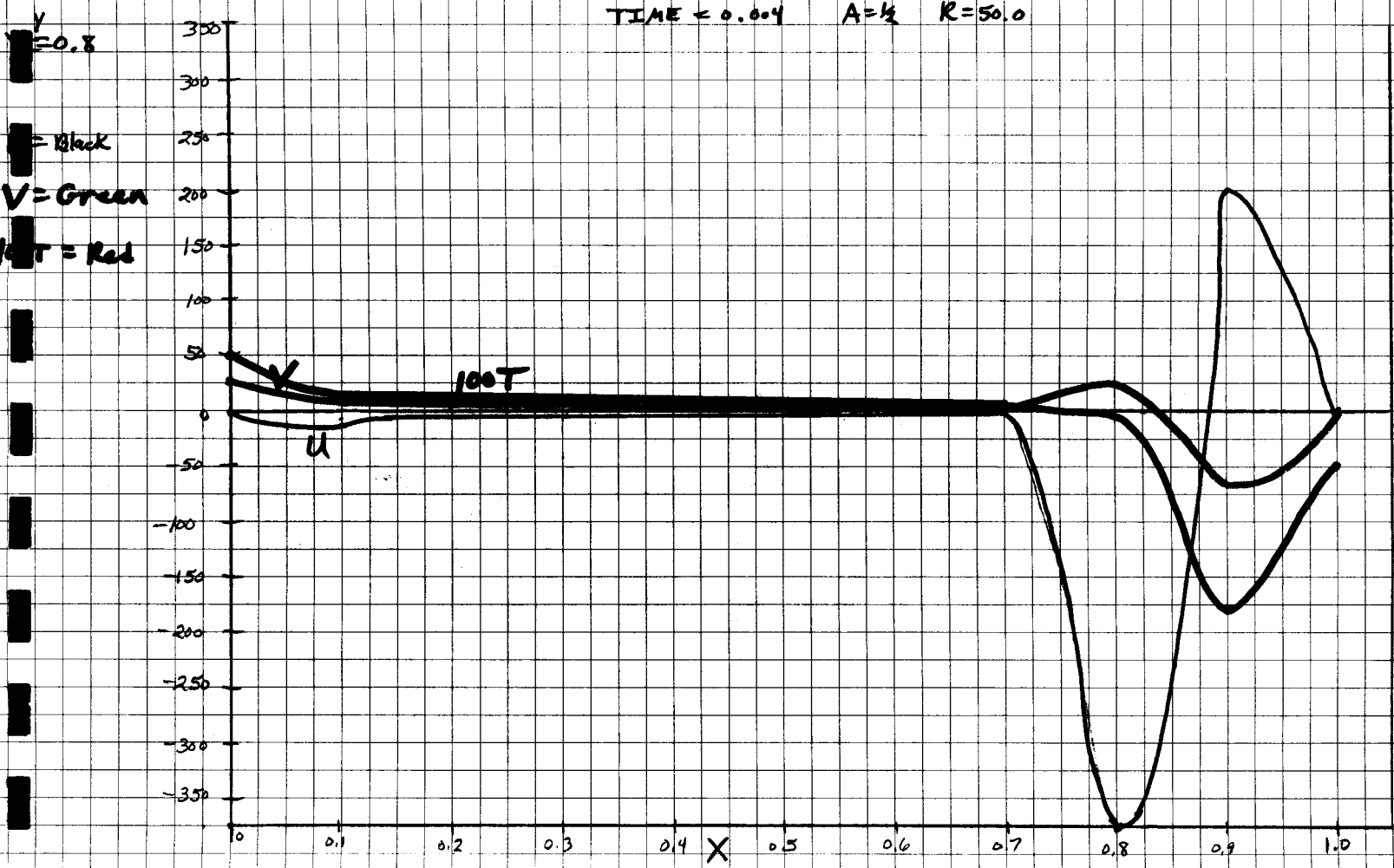
V = 0.2
u = Black
V = Green
T = Red



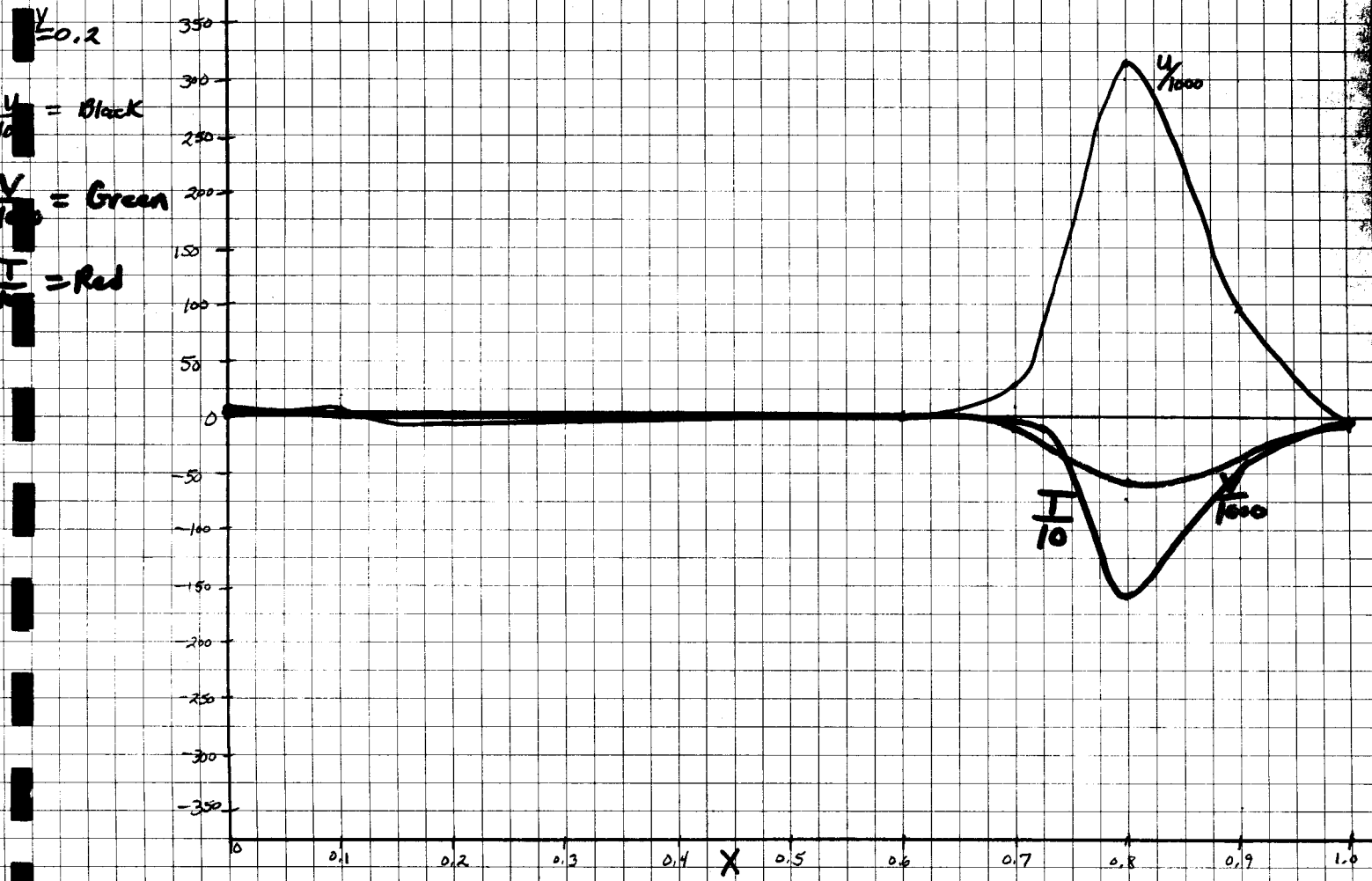
TIME = 0.004 A = 1/2 R = 50.0



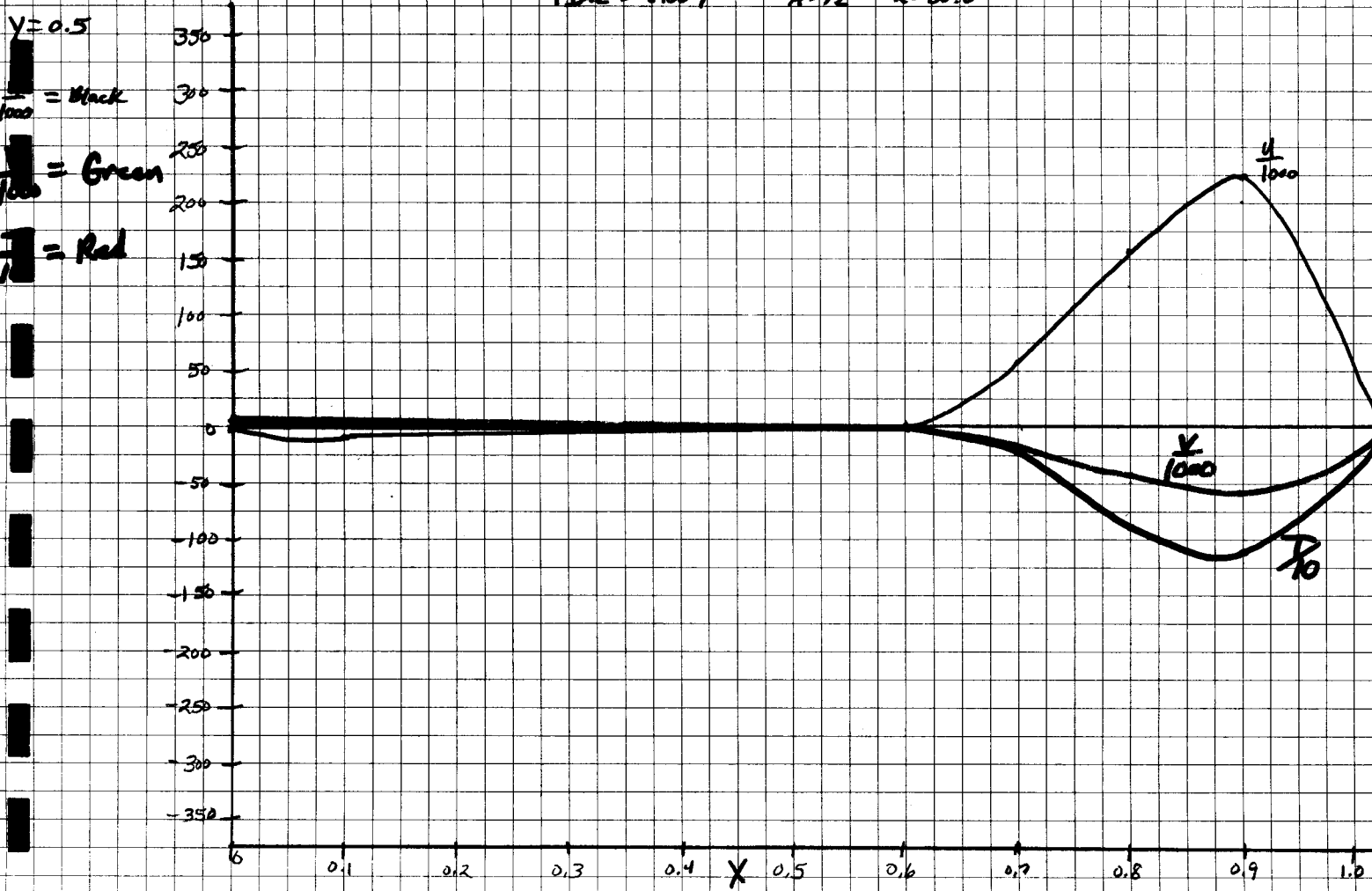
TIME = 0.004 A = 1/2 R = 50.0



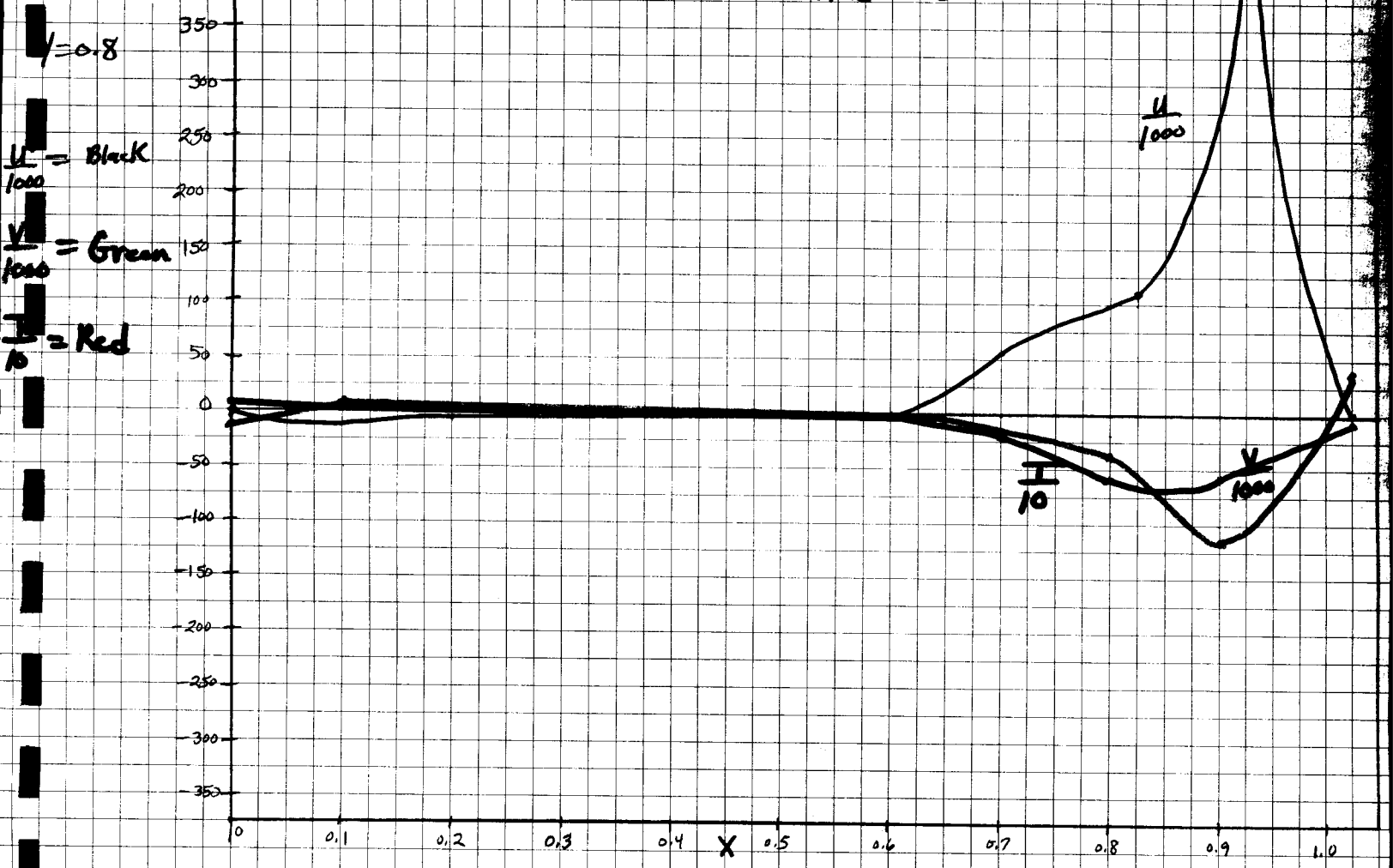
TIME = 0.007 A = 1/2 K = 50.0



TIME = 0.007 A = 1/2 K = 50.0



TIME = 0.007 A = 1/2 R = 50.0



A = 1.00 R = 1.0 TIME = 0.001

VELOCITY IN X DIRECTION

0.000E+00	-0.311E+00	-0.193E+00	-0.120E+00	-0.749E-01	-0.464E-01	-0.285E-01	-0.173E-01	-0.103E-01	-0.598E-02	0.000E+00
0.000E+00	-0.311E+00	-0.193E+00	-0.120E+00	-0.748E-01	-0.462E-01	-0.282E-01	-0.170E-01	-0.998E-02	-0.568E-02	0.000E+00
0.000E+00	-0.311E+00	-0.193E+00	-0.120E+00	-0.744E-01	-0.455E-01	-0.273E-01	-0.160E-01	-0.903E-02	-0.490E-02	0.000E+00
0.000E+00	-0.311E+00	-0.193E+00	-0.119E+00	-0.735E-01	-0.441E-01	-0.257E-01	-0.143E-01	-0.767E-02	-0.390E-02	0.000E+00
0.000E+00	-0.311E+00	-0.193E+00	-0.118E+00	-0.713E-01	-0.413E-01	-0.228E-01	-0.119E-01	-0.592E-02	-0.278E-02	0.000E+00
0.000E+00	-0.310E+00	-0.191E+00	-0.115E+00	-0.665E-01	-0.362E-01	-0.185E-01	-0.885E-02	-0.398E-02	-0.169E-02	0.000E+00
0.000E+00	-0.310E+00	-0.187E+00	-0.107E+00	-0.575E-01	-0.283E-01	-0.129E-01	-0.552E-02	-0.221E-02	-0.839E-03	0.000E+00
0.000E+00	-0.306E+00	-0.175E+00	-0.915E-01	-0.430E-01	-0.183E-01	-0.725E-02	-0.267E-02	-0.930E-03	-0.308E-03	0.000E+00
0.000E+00	-0.291E+00	-0.146E+00	-0.636E-01	-0.245E-01	-0.862E-02	-0.282E-02	-0.871E-03	-0.256E-03	-0.729E-04	0.000E+00
0.000E+00	-0.239E+00	-0.890E-01	-0.284E-01	-0.824E-02	-0.224E-02	-0.580E-03	-0.145E-03	-0.353E-04	-0.839E-05	0.000E+00
0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

VELOCITY IN Y DIRECTION

0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0.500E+00	0.311E+00	0.193E+00	0.120E+00	0.748E-01	0.462E-01	0.282E-01	0.170E-01	0.998E-02	0.568E-02	0.000E+00
0.500E+00	0.311E+00	0.193E+00	0.120E+00	0.744E-01	0.455E-01	0.273E-01	0.160E-01	0.903E-02	0.490E-02	0.000E+00
0.500E+00	0.311E+00	0.193E+00	0.119E+00	0.735E-01	0.441E-01	0.257E-01	0.143E-01	0.767E-02	0.390E-02	0.000E+00
0.500E+00	0.311E+00	0.193E+00	0.118E+00	0.713E-01	0.413E-01	0.228E-01	0.119E-01	0.592E-02	0.278E-02	0.000E+00
0.500E+00	0.310E+00	0.191E+00	0.115E+00	0.665E-01	0.362E-01	0.185E-01	0.885E-02	0.398E-02	0.169E-02	0.000E+00
0.500E+00	0.310E+00	0.187E+00	0.107E+00	0.575E-01	0.283E-01	0.129E-01	0.552E-02	0.221E-02	0.839E-03	0.000E+00
0.500E+00	0.306E+00	0.175E+00	0.915E-01	0.430E-01	0.183E-01	0.725E-02	0.267E-02	0.930E-03	0.308E-03	0.000E+00
0.500E+00	0.291E+00	0.146E+00	0.636E-01	0.245E-01	0.862E-02	0.282E-02	0.871E-03	0.256E-03	0.729E-04	0.000E+00
0.500E+00	0.239E+00	0.890E-01	0.284E-01	0.824E-02	0.224E-02	0.580E-03	0.145E-03	0.353E-04	0.839E-05	0.000E+00
0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

TEMPERATURE VALUES

0.500E+00	0.311E+00	0.193E+00	0.120E+00	0.749E-01	0.465E-01	0.287E-01	0.175E-01	0.105E-01	0.622E-02	-0.359E+00
0.500E+00	0.311E+00	0.193E+00	0.120E+00	0.748E-01	0.462E-01	0.282E-01	0.170E-01	0.998E-02	0.568E-02	-0.500E+00
0.500E+00	0.311E+00	0.193E+00	0.120E+00	0.744E-01	0.455E-01	0.273E-01	0.160E-01	0.903E-02	0.490E-02	-0.500E+00
0.500E+00	0.311E+00	0.193E+00	0.119E+00	0.735E-01	0.441E-01	0.257E-01	0.143E-01	0.767E-02	0.390E-02	-0.500E+00
0.500E+00	0.311E+00	0.193E+00	0.118E+00	0.713E-01	0.413E-01	0.228E-01	0.119E-01	0.592E-02	0.278E-02	-0.500E+00
0.500E+00	0.310E+00	0.191E+00	0.115E+00	0.665E-01	0.362E-01	0.185E-01	0.885E-02	0.398E-02	0.169E-02	-0.500E+00
0.500E+00	0.310E+00	0.187E+00	0.107E+00	0.575E-01	0.283E-01	0.129E-01	0.552E-02	0.221E-02	0.839E-03	-0.500E+00
0.500E+00	0.306E+00	0.175E+00	0.915E-01	0.430E-01	0.183E-01	0.725E-02	0.267E-02	0.930E-03	0.308E-03	-0.500E+00
0.500E+00	0.291E+00	0.146E+00	0.636E-01	0.245E-01	0.862E-02	0.282E-02	0.871E-03	0.256E-03	0.729E-04	-0.500E+00
0.500E+00	0.239E+00	0.890E-01	0.284E-01	0.824E-02	0.224E-02	0.580E-03	0.145E-03	0.353E-04	0.839E-05	-0.500E+00
0.500E+00	0.972E-01	0.189E-01	0.367E-02	0.715E-03	0.139E-03	0.270E-04	0.526E-05	0.102E-05	0.199E-06	-0.284E+00

A = 1.00 R = 1.0 TIME = 0.002

VELOCITY IN X DIRECTION

0.000E+00	-0.582E+00	-0.379E+00	-0.246E+00	-0.159E+00	-0.102E+00	-0.650E-01	-0.409E-01	-0.255E-01	-0.310E+00	0.000E+00
0.000E+00	-0.271E+00	-0.185E+00	-0.125E+00	-0.839E-01	-0.553E-01	-0.360E-01	-0.232E-01	-0.149E-01	-0.303E+00	0.000E+00
0.000E+00	-0.271E+00	-0.185E+00	-0.124E+00	-0.826E-01	-0.539E-01	-0.347E-01	-0.223E-01	-0.142E-01	-0.303E+00	0.000E+00
0.000E+00	-0.271E+00	-0.184E+00	-0.123E+00	-0.804E-01	-0.518E-01	-0.332E-01	-0.213E-01	-0.135E-01	-0.302E+00	0.000E+00
0.000E+00	-0.270E+00	-0.182E+00	-0.119E+00	-0.769E-01	-0.492E-01	-0.316E-01	-0.200E-01	-0.123E-01	-0.301E+00	0.000E+00
0.000E+00	-0.269E+00	-0.177E+00	-0.113E+00	-0.725E-01	-0.465E-01	-0.295E-01	-0.181E-01	-0.105E-01	-0.301E+00	0.000E+00
0.000E+00	-0.264E+00	-0.168E+00	-0.106E+00	-0.678E-01	-0.432E-01	-0.263E-01	-0.150E-01	-0.791E-02	-0.302E+00	0.000E+00
0.000E+00	-0.252E+00	-0.154E+00	-0.978E-01	-0.623E-01	-0.375E-01	-0.206E-01	-0.103E-01	-0.473E-02	-0.315E+00	0.000E+00
0.000E+00	-0.227E+00	-0.139E+00	-0.884E-01	-0.518E-01	-0.269E-01	-0.124E-01	-0.518E-02	-0.199E-02	-0.374E+00	0.000E+00
0.000E+00	-0.195E+00	-0.121E+00	-0.669E-01	-0.309E-01	-0.124E-01	-0.450E-02	-0.150E-02	-0.470E-03	-0.599E+00	0.000E+00
0.000E+00	0.183E+00	0.522E-01	0.134E-01	0.323E-02	0.752E-03	0.170E-03	0.377E-04	0.824E-05	0.177E-05	0.000E+00

VELOCITY IN Y DIRECTION

0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0.500E+00	0.337E+00	0.226E+00	0.151E+00	0.999E-01	0.655E-01	0.425E-01	0.274E-01	0.176E-01	0.200E+00	0.272E-03
0.500E+00	0.337E+00	0.226E+00	0.150E+00	0.989E-01	0.644E-01	0.416E-01	0.268E-01	0.171E-01	0.199E+00	0.358E-03
0.500E+00	0.337E+00	0.225E+00	0.149E+00	0.973E-01	0.630E-01	0.406E-01	0.260E-01	0.164E-01	0.198E+00	0.418E-03
0.500E+00	0.336E+00	0.224E+00	0.146E+00	0.950E-01	0.613E-01	0.394E-01	0.248E-01	0.151E-01	0.197E+00	0.413E-03
0.500E+00	0.335E+00	0.220E+00	0.143E+00	0.924E-01	0.595E-01	0.375E-01	0.226E-01	0.129E-01	0.196E+00	0.276E-03
0.500E+00	0.332E+00	0.215E+00	0.139E+00	0.897E-01	0.565E-01	0.336E-01	0.186E-01	0.959E-02	0.197E+00	-0.232E-03
0.500E+00	0.326E+00	0.209E+00	0.135E+00	0.848E-01	0.494E-01	0.262E-01	0.127E-01	0.569E-02	0.206E+00	-0.239E-02
0.500E+00	0.318E+00	0.205E+00	0.127E+00	0.711E-01	0.352E-01	0.156E-01	0.833E-02	0.238E-02	0.246E+00	-0.129E-01
0.500E+00	0.318E+00	0.192E+00	0.975E-01	0.422E-01	0.161E-01	0.563E-02	0.182E-02	0.560E-03	0.373E+00	-0.668E-01
0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

TEMPERATURE VALUES

0.500E+00	0.337E+00	0.226E+00	0.151E+00	0.100E+00	0.660E-01	0.430E-01	0.277E-01	0.177E-01	-0.105E+00	-0.243E+00
0.500E+00	0.337E+00	0.226E+00	0.151E+00	0.998E-01	0.653E-01	0.423E-01	0.271E-01	0.173E-01	-0.300E+00	-0.500E+00
0.500E+00	0.337E+00	0.226E+00	0.150E+00	0.987E-01	0.640E-01	0.411E-01	0.262E-01	0.166E-01	-0.300E+00	-0.500E+00
0.500E+00	0.337E+00	0.225E+00	0.148E+00	0.967E-01	0.621E-01	0.396E-01	0.251E-01	0.156E-01	-0.301E+00	-0.500E+00
0.500E+00	0.336E+00	0.223E+00	0.146E+00	0.937E-01	0.597E-01	0.378E-01	0.235E-01	0.142E-01	-0.302E+00	-0.500E+00
0.500E+00	0.335E+00	0.220E+00	0.141E+00	0.896E-01	0.566E-01	0.351E-01	0.210E-01	0.119E-01	-0.304E+00	-0.500E+00
0.500E+00	0.331E+00	0.212E+00	0.134E+00	0.845E-01	0.522E-01	0.308E-01	0.170E-01	0.875E-02	-0.303E+00	-0.500E+00
0.500E+00	0.323E+00	0.202E+00	0.125E+00	0.769E-01	0.442E-01	0.234E-01	0.114E-01	0.512E-02	-0.294E+00	-0.500E+00
0.500E+00	0.308E+00	0.187E+00	0.112E+00	0.616E-01	0.305E-01	0.136E-01	0.558E-02	0.211E-02	-0.254E+00	-0.500E+00
0.500E+00	0.285E+00	0.159E+00	0.799E-01	0.348E-01	0.135E-01	0.479E-02	0.157E-02	0.488E-03	0.126E+00	-0.500E+00
0.500E+00	0.214E+00	0.793E-01	0.255E-01	0.751E-02	0.206E-02	0.538E-03	0.135E-03	0.332E-04	0.972E-01	-0.220E+00

A = 1.00 R = 1.0 TIME = 0.003

VELOCITY IN X DIRECTION

0.000E+00	-0.825E+00	-0.555E+00	-0.372E+00	-0.248E+00	-0.164E+00	-0.107E+00	-0.702E-01	-0.452E-01	-0.633E+00	0.000E+00
0.000E+00	-0.554E+00	-0.370E+00	-0.246E+00	-0.163E+00	-0.108E+00	-0.713E-01	-0.467E-01	-0.302E-01	0.352E-01	0.000E+00
0.000E+00	-0.242E+00	-0.176E+00	-0.125E+00	-0.876E-01	-0.608E-01	-0.418E-01	-0.283E-01	-0.187E-01	0.406E-01	0.000E+00
0.000E+00	-0.242E+00	-0.174E+00	-0.123E+00	-0.860E-01	-0.596E-01	-0.406E-01	-0.269E-01	-0.175E-01	0.396E-01	0.000E+00
0.000E+00	-0.240E+00	-0.171E+00	-0.120E+00	-0.842E-01	-0.577E-01	-0.384E-01	-0.249E-01	-0.160E-01	0.381E-01	0.000E+00
0.000E+00	-0.236E+00	-0.167E+00	-0.117E+00	-0.815E-01	-0.544E-01	-0.351E-01	-0.224E-01	-0.142E-01	0.352E-01	0.000E+00
0.000E+00	-0.230E+00	-0.162E+00	-0.114E+00	-0.783E-01	-0.489E-01	-0.309E-01	-0.196E-01	-0.121E-01	0.306E-01	0.000E+00
0.000E+00	-0.223E+00	-0.158E+00	-0.106E+00	-0.669E-01	-0.418E-01	-0.263E-01	-0.161E-01	-0.936E-02	0.314E-01	0.000E+00
0.000E+00	-0.218E+00	-0.147E+00	-0.895E-01	-0.545E-01	-0.339E-01	-0.203E-01	-0.112E-01	-0.565E-02	0.878E-01	0.000E+00
0.000E+00	-0.208E+00	-0.116E+00	-0.667E-01	-0.403E-01	-0.228E-01	-0.115E-01	-0.521E-02	-0.214E-02	0.393E+00	0.000E+00
0.000E+00	0.420E+00	0.192E+00	0.756E-01	0.263E-01	0.840E-02	0.250E-02	0.709E-03	0.192E-03	0.865E+00	0.000E+00

VELOCITY IN Y DIRECTION

0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0.500E+00	0.666E+00	0.444E+00	0.295E+00	0.195E+00	0.129E+00	0.852E-01	0.556E-01	0.358E-01	0.180E+00	0.303E+00
0.500E+00	0.355E+00	0.250E+00	0.174E+00	0.120E+00	0.825E-01	0.561E-01	0.376E-01	0.248E-01	0.174E+00	0.311E-04
0.500E+00	0.355E+00	0.249E+00	0.173E+00	0.119E+00	0.818E-01	0.551E-01	0.364E-01	0.237E-01	0.174E+00	0.130E-03
0.500E+00	0.354E+00	0.248E+00	0.172E+00	0.118E+00	0.805E-01	0.532E-01	0.346E-01	0.223E-01	0.174E+00	0.216E-03
0.500E+00	0.353E+00	0.247E+00	0.172E+00	0.117E+00	0.777E-01	0.504E-01	0.324E-01	0.205E-01	0.175E+00	-0.381E-05
0.500E+00	0.352E+00	0.247E+00	0.170E+00	0.113E+00	0.731E-01	0.468E-01	0.295E-01	0.180E-01	0.178E+00	-0.118E-02
0.500E+00	0.355E+00	0.248E+00	0.165E+00	0.105E+00	0.673E-01	0.420E-01	0.250E-01	0.139E-01	0.177E+00	-0.412E-02
0.503E+00	0.364E+00	0.242E+00	0.153E+00	0.963E-01	0.587E-01	0.334E-01	0.174E-01	0.833E-02	0.145E+00	-0.752E-02
0.518E+00	0.369E+00	0.225E+00	0.137E+00	0.788E-01	0.410E-01	0.191E-01	0.809E-02	0.315E-02	-0.361E-02	-0.743E-02
0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

TEMPERATURE VALUES

0.500E+00	0.354E+00	0.250E+00	0.174E+00	0.120E+00	0.828E-01	0.562E-01	0.379E-01	0.253E-01	-0.236E+00	-0.270E+00
0.500E+00	0.355E+00	0.250E+00	0.174E+00	0.120E+00	0.823E-01	0.558E-01	0.375E-01	0.249E-01	-0.325E+00	-0.500E+00
0.500E+00	0.355E+00	0.249E+00	0.173E+00	0.119E+00	0.812E-01	0.549E-01	0.365E-01	0.240E-01	-0.326E+00	-0.500E+00
0.500E+00	0.355E+00	0.248E+00	0.171E+00	0.117E+00	0.798E-01	0.533E-01	0.350E-01	0.226E-01	-0.326E+00	-0.500E+00
0.500E+00	0.353E+00	0.246E+00	0.169E+00	0.115E+00	0.775E-01	0.509E-01	0.328E-01	0.209E-01	-0.326E+00	-0.500E+00
0.500E+00	0.351E+00	0.243E+00	0.166E+00	0.112E+00	0.736E-01	0.473E-01	0.300E-01	0.188E-01	-0.325E+00	-0.500E+00
0.500E+00	0.348E+00	0.238E+00	0.161E+00	0.106E+00	0.678E-01	0.427E-01	0.265E-01	0.159E-01	-0.320E+00	-0.500E+00
0.500E+00	0.343E+00	0.232E+00	0.151E+00	0.963E-01	0.601E-01	0.368E-01	0.216E-01	0.119E-01	-0.311E+00	-0.500E+00
0.500E+00	0.335E+00	0.217E+00	0.135E+00	0.832E-01	0.495E-01	0.278E-01	0.144E-01	0.693E-02	-0.301E+00	-0.500E+00
0.500E+00	0.316E+00	0.190E+00	0.112E+00	0.626E-01	0.321E-01	0.150E-01	0.640E-02	0.252E-02	-0.290E+00	-0.500E+00
0.500E+00	0.273E+00	0.139E+00	0.643E-01	0.266E-01	0.997E-02	0.344E-02	0.111E-02	0.342E-03	-0.109E+00	-0.246E+00

A = 1.00 R = 1.0 TIME = 0.004

VELOCITY IN X DIRECTION

0.000E+00	-0.104E+01	-0.723E+00	-0.497E+00	-0.340E+00	-0.231E+00	-0.155E+00	-0.103E+00	-0.923E+00	-0.251E+00	0.000E+00
0.000E+00	-0.982E+00	-0.658E+00	-0.441E+00	-0.294E+00	-0.196E+00	-0.129E+00	-0.844E-01	-0.909E+00	-0.108E+01	0.000E+00
0.000E+00	-0.220E+00	-0.167E+00	-0.124E+00	-0.916E-01	-0.660E-01	-0.467E-01	-0.325E-01	-0.877E+00	0.286E-01	0.000E+00
0.000E+00	-0.219E+00	-0.166E+00	-0.123E+00	-0.904E-01	-0.644E-01	-0.450E-01	-0.312E-01	-0.876E+00	0.278E-01	0.000E+00
0.000E+00	-0.217E+00	-0.164E+00	-0.122E+00	-0.880E-01	-0.618E-01	-0.430E-01	-0.295E-01	-0.877E+00	0.260E-01	0.000E+00
0.000E+00	-0.215E+00	-0.163E+00	-0.119E+00	-0.841E-01	-0.586E-01	-0.404E-01	-0.272E-01	-0.881E+00	0.244E-01	0.000E+00
0.000E+00	-0.214E+00	-0.160E+00	-0.113E+00	-0.789E-01	-0.546E-01	-0.366E-01	-0.237E-01	-0.898E+00	0.263E-01	0.000E+00
0.000E+00	-0.213E+00	-0.151E+00	-0.104E+00	-0.727E-01	-0.485E-01	-0.309E-01	-0.193E-01	-0.956E+00	0.293E-01	0.000E+00
0.000E+00	-0.204E+00	-0.137E+00	-0.949E-01	-0.623E-01	-0.385E-01	-0.235E-01	-0.144E-01	-0.112E+01	-0.239E-01	0.000E+00
0.000E+00	-0.177E+00	-0.121E+00	-0.766E-01	-0.444E-01	-0.260E-01	-0.155E-01	-0.886E-02	-0.153E+01	-0.356E+00	0.000E+00
0.000E+00	0.654E+00	0.336E+00	0.166E+00	0.770E-01	0.325E-01	0.126E-01	0.456E-02	0.154E-02	-0.162E+00	0.000E+00

VELOCITY IN Y DIRECTION

0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0.894E+00	0.884E+00	0.606E+00	0.414E+00	0.282E+00	0.190E+00	0.127E+00	0.847E-01	0.361E+00	0.124E+01	0.206E+00
0.500E+00	0.369E+00	0.269E+00	0.194E+00	0.139E+00	0.983E-01	0.686E-01	0.474E-01	0.338E+00	0.157E+00	0.937E-04
0.500E+00	0.368E+00	0.269E+00	0.194E+00	0.138E+00	0.973E-01	0.675E-01	0.465E-01	0.338E+00	0.157E+00	-0.737E-04
0.500E+00	0.368E+00	0.269E+00	0.194E+00	0.137E+00	0.958E-01	0.662E-01	0.451E-01	0.337E+00	0.158E+00	-0.384E-03
0.500E+00	0.370E+00	0.270E+00	0.193E+00	0.135E+00	0.941E-01	0.643E-01	0.429E-01	0.338E+00	0.158E+00	-0.767E-03
0.501E+00	0.373E+00	0.270E+00	0.190E+00	0.133E+00	0.913E-01	0.607E-01	0.393E-01	0.346E+00	0.158E+00	-0.101E-02
0.506E+00	0.378E+00	0.268E+00	0.188E+00	0.129E+00	0.857E-01	0.548E-01	0.344E-01	0.368E+00	0.161E+00	-0.123E-02
0.521E+00	0.381E+00	0.268E+00	0.185E+00	0.120E+00	0.757E-01	0.466E-01	0.280E-01	0.419E+00	0.210E+00	-0.616E-02
0.558E+00	0.389E+00	0.270E+00	0.170E+00	0.103E+00	0.610E-01	0.345E-01	0.182E-01	0.493E+00	0.426E+00	-0.404E-01
0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

TEMPERATURE VALUES

0.500E+00	0.366E+00	0.267E+00	0.193E+00	0.138E+00	0.976E-01	0.684E-01	0.474E-01	-0.123E+00	-0.279E+00	-0.269E+00
0.500E+00	0.368E+00	0.268E+00	0.193E+00	0.138E+00	0.976E-01	0.682E-01	0.471E-01	-0.161E+00	-0.230E+00	-0.500E+00
0.500E+00	0.368E+00	0.268E+00	0.192E+00	0.137E+00	0.965E-01	0.670E-01	0.460E-01	-0.162E+00	-0.342E+00	-0.500E+00
0.500E+00	0.368E+00	0.267E+00	0.191E+00	0.135E+00	0.947E-01	0.653E-01	0.445E-01	-0.163E+00	-0.342E+00	-0.500E+00
0.500E+00	0.366E+00	0.265E+00	0.189E+00	0.133E+00	0.921E-01	0.630E-01	0.425E-01	-0.164E+00	-0.341E+00	-0.500E+00
0.500E+00	0.365E+00	0.263E+00	0.186E+00	0.129E+00	0.886E-01	0.598E-01	0.395E-01	-0.163E+00	-0.339E+00	-0.500E+00
0.500E+00	0.363E+00	0.258E+00	0.180E+00	0.124E+00	0.837E-01	0.550E-01	0.353E-01	-0.156E+00	-0.337E+00	-0.500E+00
0.500E+00	0.359E+00	0.251E+00	0.172E+00	0.116E+00	0.759E-01	0.482E-01	0.300E-01	-0.134E+00	-0.336E+00	-0.500E+00
0.500E+00	0.351E+00	0.240E+00	0.160E+00	0.103E+00	0.644E-01	0.392E-01	0.232E-01	-0.833E-01	-0.324E+00	-0.500E+00
0.500E+00	0.338E+00	0.222E+00	0.138E+00	0.833E-01	0.486E-01	0.271E-01	0.141E-01	-0.861E-02	-0.271E+00	-0.500E+00
0.500E+00	0.314E+00	0.183E+00	0.100E+00	0.517E-01	0.247E-01	0.108E-01	0.443E-02	0.206E-01	-0.169E+00	-0.253E+00

A = 1.00 R = 1.0 TIME = 0.005

VELOCITY IN X DIRECTION

0.000E+00	-0.124E+01	-0.881E+00	-0.620E+00	-0.433E+00	-0.300E+00	-0.206E+00	-0.140E+00	-0.136E+01	-0.330E+00	0.000E+00
0.000E+00	-0.129E+01	-0.891E+00	-0.611E+00	-0.417E+00	-0.281E+00	-0.189E+00	-0.125E+00	0.497E-01	0.452E+00	0.000E+00
0.000E+00	0.107E+00	0.327E-01	-0.371E-02	-0.187E-01	-0.228E-01	-0.220E-01	-0.190E-01	0.114E+00	0.230E-01	0.000E+00
0.000E+00	-0.203E+00	-0.180E+00	-0.122E+00	-0.919E-01	-0.677E-01	-0.492E-01	-0.350E-01	0.101E+00	0.176E-01	0.000E+00
0.000E+00	-0.202E+00	-0.159E+00	-0.120E+00	-0.897E-01	-0.658E-01	-0.472E-01	-0.331E-01	0.971E-01	0.191E-01	0.000E+00
0.000E+00	-0.202E+00	-0.156E+00	-0.117E+00	-0.871E-01	-0.629E-01	-0.441E-01	-0.305E-01	0.933E-01	0.205E-01	0.000E+00
0.000E+00	-0.201E+00	-0.151E+00	-0.113E+00	-0.829E-01	-0.582E-01	-0.401E-01	-0.274E-01	0.105E+00	0.173E-01	0.000E+00
0.000E+00	-0.195E+00	0.147E+00	-0.108E+00	-0.756E-01	-0.518E-01	-0.352E-01	-0.232E-01	0.196E+00	0.785E-02	0.000E+00
0.000E+00	-0.187E+00	-0.141E+00	-0.969E-01	-0.651E-01	-0.436E-01	-0.282E-01	-0.175E-01	0.570E+00	0.485E-01	0.000E+00
0.000E+00	-0.187E+00	-0.123E+00	-0.785E-01	-0.511E-01	0.315E-01	-0.186E-01	-0.110E-01	0.170E+01	0.367E+00	0.000E+00
0.000E+00	0.873E+00	0.503E+00	0.271E+00	0.141E+00	0.705E-01	0.334E-01	0.148E-01	0.190E+01	0.768E+00	0.000E+00

VELOCITY IN Y DIRECTION

0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0.113E+01	0.856E+00	0.619E+00	0.444E+00	0.314E+00	0.220E+00	0.152E+00	0.105E+00	0.336E+00	-0.486E+00	0.140E+00
0.500E+00	0.380E+00	0.285E+00	0.211E+00	0.154E+00	0.112E+00	0.807E-01	0.574E-01	0.306E+00	0.146E+00	-0.155E+00
0.500E+00	0.380E+00	0.285E+00	0.211E+00	0.154E+00	0.111E+00	0.797E-01	0.561E-01	0.306E+00	0.146E+00	0.196E-05
0.501E+00	0.381E+00	0.286E+00	0.210E+00	0.153E+00	0.110E+00	0.784E-01	0.547E-01	0.306E+00	0.145E+00	-0.637E-04
0.502E+00	0.383E+00	0.286E+00	0.210E+00	0.153E+00	0.109E+00	0.763E-01	0.526E-01	0.306E+00	0.146E+00	-0.265E-03
0.507E+00	0.386E+00	0.287E+00	0.211E+00	0.151E+00	0.106E+00	0.733E-01	0.497E-01	0.295E+00	0.150E+00	-0.964E-03
0.517E+00	0.389E+00	0.290E+00	0.210E+00	0.147E+00	0.102E+00	0.688E-01	0.450E-01	0.245E+00	0.156E+00	-0.357E-02
0.532E+00	0.400E+00	0.295E+00	0.206E+00	0.142E+00	0.948E-01	0.607E-01	0.378E-01	0.838E-01	0.124E+00	-0.973E-02
0.550E+00	0.425E+00	0.295E+00	0.200E+00	0.130E+00	0.805E-01	0.482E-01	0.281E-01	-0.322E+00	-0.807E-01	-0.225E-01
0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

TEMPERATURE VALUES

0.500E+00	0.375E+00	0.280E+00	0.207E+00	0.152E+00	0.110E+00	0.794E-01	0.564E-01	-0.134E+00	-0.285E+00	-0.273E+00
0.500E+00	0.377E+00	0.281E+00	0.208E+00	0.152E+00	0.110E+00	0.792E-01	0.561E-01	-0.195E+00	-0.364E+00	-0.500E+00
0.500E+00	0.379E+00	0.283E+00	0.209E+00	0.152E+00	0.110E+00	0.784E-01	0.553E-01	-0.195E+00	-0.353E+00	-0.500E+00
0.500E+00	0.378E+00	0.282E+00	0.207E+00	0.150E+00	0.108E+00	0.768E-01	0.537E-01	-0.195E+00	-0.353E+00	-0.500E+00
0.500E+00	0.377E+00	0.280E+00	0.205E+00	0.148E+00	0.105E+00	0.744E-01	0.515E-01	-0.193E+00	-0.352E+00	-0.500E+00
0.500E+00	0.376E+00	0.278E+00	0.202E+00	0.145E+00	0.102E+00	0.710E-01	0.485E-01	-0.190E+00	-0.352E+00	-0.500E+00
0.500E+00	0.373E+00	0.274E+00	0.198E+00	0.140E+00	0.973E-01	0.665E-01	0.446E-01	-0.185E+00	-0.350E+00	-0.500E+00
0.500E+00	0.370E+00	0.269E+00	0.191E+00	0.132E+00	0.904E-01	0.602E-01	0.390E-01	-0.184E+00	-0.343E+00	-0.500E+00
0.500E+00	0.365E+00	0.260E+00	0.180E+00	0.122E+00	0.802E-01	0.510E-01	0.316E-01	-0.187E+00	-0.327E+00	-0.500E+00
0.500E+00	0.357E+00	0.246E+00	0.163E+00	0.104E+00	0.644E-01	0.385E-01	0.223E-01	-0.150E+00	-0.297E+00	-0.500E+00
0.500E+00	0.346E+00	0.221E+00	0.132E+00	0.761E-01	0.417E-01	0.217E-01	0.106E-01	-0.122E-01	-0.207E+00	-0.258E+00

A = 1.00 R = 1.0 TIME = 0.006

VELOCITY IN X DIRECTION

0.000E+00	-0.143E+01	-0.103E+01	-0.739E+00	-0.526E+00	-0.371E+00	-0.260E+00	-0.176E+01	-0.809E+00	-0.282E+00	0.000E+00
0.000E+00	-0.143E+01	-0.102E+01	-0.722E+00	-0.505E+00	-0.351E+00	-0.242E+00	-0.174E+01	-0.646E+01	-0.998E+00	0.000E+00
0.000E+00	0.258E+00	0.141E+00	0.724E-01	0.324E-01	0.980E-02	-0.198E-02	-0.158E+01	0.922E-01	0.174E+01	0.000E+00
0.000E+00	-0.190E+00	-0.154E+00	-0.120E+00	-0.933E-01	-0.705E-01	-0.522E-01	-0.162E+01	0.715E-01	0.124E-01	0.000E+00
0.000E+00	-0.190E+00	-0.152E+00	-0.119E+00	-0.915E-01	-0.683E-01	-0.501E-01	-0.162E+01	0.707E-01	0.111E-01	0.000E+00
0.000E+00	-0.189E+00	-0.150E+00	-0.117E+00	-0.886E-01	-0.653E-01	-0.476E-01	-0.164E+01	0.718E-01	0.960E-02	0.000E+00
0.000E+00	-0.186E+00	-0.149E+00	-0.113E+00	-0.842E-01	-0.616E-01	-0.440E-01	-0.168E+01	0.582E-01	0.105E-01	0.000E+00
0.000E+00	-0.186E+00	-0.145E+00	-0.107E+00	-0.787E-01	-0.561E-01	-0.387E-01	-0.180E+01	-0.841E-01	0.156E-01	0.000E+00
0.000E+00	-0.188E+00	-0.136E+00	-0.994E-01	-0.704E-01	-0.476E-01	-0.317E-01	-0.205E+01	-0.778E+00	-0.300E-01	0.000E+00
0.000E+00	-0.173E+00	-0.124E+00	-0.868E-01	-0.560E-01	-0.359E-01	-0.227E-01	-0.254E+01	-0.303E+01	-0.332E+00	0.000E+00
0.000E+00	0.110E+01	0.666E+00	0.389E+00	0.219E+00	0.118E+00	0.624E-01	0.316E-01	-0.126E+01	-0.141E+00	0.000E+00

VELOCITY IN Y DIRECTION

0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0.107E+01	0.738E+00	0.565E+00	0.425E+00	0.314E+00	0.230E+00	0.167E+00	0.498E+00	0.378E+01	0.109E+01	0.149E+00
0.500E+00	0.119E+01	0.797E+00	0.536E+00	0.362E+00	0.245E+00	0.165E+00	0.491E+00	0.310E+00	0.153E+00	0.573E+00
0.501E+00	0.390E+00	0.298E+00	0.225E+00	0.168E+00	0.124E+00	0.907E-01	0.445E+00	0.283E+00	0.138E+00	-0.572E-04
0.502E+00	0.391E+00	0.299E+00	0.226E+00	0.168E+00	0.123E+00	0.897E-01	0.447E+00	0.282E+00	0.139E+00	-0.115E-03
0.506E+00	0.392E+00	0.300E+00	0.226E+00	0.167E+00	0.122E+00	0.882E-01	0.452E+00	0.281E+00	0.140E+00	-0.444E-03
0.511E+00	0.396E+00	0.303E+00	0.227E+00	0.167E+00	0.121E+00	0.856E-01	0.465E+00	0.294E+00	0.140E+00	-0.149E-02
0.518E+00	0.404E+00	0.306E+00	0.227E+00	0.166E+00	0.117E+00	0.813E-01	0.488E+00	0.380E+00	0.141E+00	-0.325E-02
0.529E+00	0.417E+00	0.311E+00	0.229E+00	0.162E+00	0.111E+00	0.747E-01	0.520E+00	0.724E+00	0.188E+00	-0.762E-02
0.565E+00	0.429E+00	0.322E+00	0.227E+00	0.153E+00	0.100E+00	0.635E-01	0.540E+00	0.170E+01	0.388E+00	-0.309E-01
0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

TEMPERATURE VALUES

0.500E+00	0.382E+00	0.291E+00	0.220E+00	0.164E+00	0.122E+00	0.894E-01	-0.496E-01	-0.191E+00	-0.301E+00	-0.274E+00
0.500E+00	0.383E+00	0.292E+00	0.221E+00	0.165E+00	0.122E+00	0.894E-01	-0.566E-01	-0.142E+00	-0.328E+00	-0.500E+00
0.500E+00	0.387E+00	0.295E+00	0.222E+00	0.165E+00	0.122E+00	0.889E-01	-0.564E-01	-0.214E+00	-0.325E+00	-0.500E+00
0.500E+00	0.386E+00	0.294E+00	0.221E+00	0.164E+00	0.120E+00	0.873E-01	-0.570E-01	-0.213E+00	-0.361E+00	-0.500E+00
0.500E+00	0.386E+00	0.293E+00	0.219E+00	0.162E+00	0.118E+00	0.850E-01	-0.563E-01	-0.213E+00	-0.361E+00	-0.500E+00
0.500E+00	0.384E+00	0.291E+00	0.216E+00	0.159E+00	0.115E+00	0.819E-01	-0.522E-01	-0.212E+00	-0.359E+00	-0.500E+00
0.500E+00	0.382E+00	0.288E+00	0.212E+00	0.154E+00	0.110E+00	0.776E-01	-0.410E-01	-0.212E+00	-0.356E+00	-0.500E+00
0.500E+00	0.380E+00	0.283E+00	0.207E+00	0.148E+00	0.104E+00	0.715E-01	-0.185E-01	-0.203E+00	-0.350E+00	-0.500E+00
0.500E+00	0.376E+00	0.277E+00	0.199E+00	0.139E+00	0.949E-01	0.631E-01	0.122E-01	-0.174E+00	-0.338E+00	-0.500E+00
0.500E+00	0.372E+00	0.268E+00	0.186E+00	0.125E+00	0.811E-01	0.509E-01	0.326E-01	-0.128E+00	-0.302E+00	-0.500E+00
0.500E+00	0.373E+00	0.254E+00	0.164E+00	0.100E+00	0.595E-01	0.339E-01	0.222E-01	-0.329E-01	-0.217E+00	-0.259E+00

A = 1.00 R = 1.0 TIME = 0.007

VELOCITY IN X DIRECTION

0.000E+00	-0.180E+01	-0.117E+01	-0.854E+00	-0.618E+00	-0.443E+00	-0.315E+00	-0.219E+01	-0.843E+00	-0.278E+00	0.000E+00
0.000E+00	-0.152E+01	-0.111E+01	-0.807E+00	-0.580E+00	-0.414E+00	-0.293E+00	0.166E-01	0.125E+02	0.466E+00	0.000E+00
0.000E+00	-0.807E+00	-0.504E+00	-0.319E+00	-0.206E+00	-0.135E+00	-0.889E-01	0.156E+00	0.343E-01	-0.330E+01	0.000E+00
0.000E+00	-0.179E+00	-0.148E+00	-0.119E+00	-0.938E-01	-0.721E-01	-0.546E-01	0.169E+00	0.456E-01	0.104E-01	0.000E+00
0.000E+00	-0.179E+00	-0.147E+00	-0.118E+00	-0.920E-01	-0.705E-01	-0.530E-01	0.168E+00	0.482E-01	0.965E-02	0.000E+00
0.000E+00	-0.179E+00	-0.146E+00	-0.115E+00	-0.897E-01	-0.681E-01	-0.504E-01	0.189E+00	0.418E-01	0.856E-02	0.000E+00
0.000E+00	-0.180E+00	-0.144E+00	-0.112E+00	-0.867E-01	-0.644E-01	-0.469E-01	0.290E+00	0.369E-01	0.582E-02	0.000E+00
0.000E+00	-0.179E+00	-0.140E+00	-0.109E+00	-0.816E-01	-0.592E-01	-0.423E-01	0.638E+00	0.198E+00	-0.100E-02	0.000E+00
0.000E+00	-0.172E+00	-0.138E+00	-0.103E+00	-0.737E-01	-0.521E-01	-0.358E-01	0.161E+01	0.123E+01	0.381E-01	0.000E+00
0.000E+00	-0.174E+00	-0.132E+00	-0.906E-01	-0.626E-01	-0.414E-01	-0.266E-01	0.403E+01	0.471E+01	0.302E+00	0.000E+00
0.000E+00	0.130E+01	0.841E+00	0.516E+00	0.307E+00	0.178E+00	0.999E-01	0.296E+01	0.470E+01	0.591E+00	0.000E+00

VELOCITY IN Y DIRECTION

0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0.899E+00	0.695E+00	0.546E+00	0.423E+00	0.324E+00	0.244E+00	0.182E+00	0.466E+00	-0.858E+01	-0.419E+00	0.134E+00
0.151E+01	0.279E+01	0.184E+01	0.121E+01	0.805E+00	0.531E+00	0.348E+00	0.563E+00	0.362E+00	0.342E+01	0.703E+00
0.502E+00	0.860E-01	0.116E+00	0.118E+00	0.106E+00	0.898E-01	0.726E-01	0.393E+00	0.258E+00	0.125E+00	-0.225E+00
0.504E+00	0.398E+00	0.311E+00	0.239E+00	0.181E+00	0.136E+00	0.100E+00	0.408E+00	0.268E+00	0.132E+00	-0.333E-03
0.507E+00	0.401E+00	0.313E+00	0.240E+00	0.181E+00	0.135E+00	0.992E-01	0.394E+00	0.273E+00	0.134E+00	-0.767E-03
0.511E+00	0.406E+00	0.315E+00	0.241E+00	0.182E+00	0.134E+00	0.973E-01	0.345E+00	0.269E+00	0.137E+00	-0.132E-02
0.520E+00	0.412E+00	0.320E+00	0.244E+00	0.181E+00	0.132E+00	0.942E-01	0.213E+00	0.160E+00	0.143E+00	-0.329E-02
0.542E+00	0.422E+00	0.330E+00	0.247E+00	0.180E+00	0.128E+00	0.884E-01	-0.948E-01	-0.391E+00	0.114E+00	-0.968E-02
0.567E+00	0.453E+00	0.342E+00	0.249E+00	0.176E+00	0.119E+00	0.786E-01	-0.762E+00	-0.199E+01	-0.339E-01	-0.270E-01
0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

TEMPERATURE VALUES

0.500E+00	0.387E+00	0.299E+00	0.230E+00	0.175E+00	0.132E+00	0.985E-01	-0.647E-01	-0.211E+00	-0.309E+00	-0.276E+00
0.500E+00	0.388E+00	0.301E+00	0.231E+00	0.176E+00	0.132E+00	0.986E-01	-0.929E-01	-0.249E+00	-0.352E+00	-0.500E+00
0.500E+00	0.394E+00	0.305E+00	0.234E+00	0.177E+00	0.133E+00	0.986E-01	-0.908E-01	-0.229E+00	-0.358E+00	-0.500E+00
0.500E+00	0.393E+00	0.305E+00	0.233E+00	0.176E+00	0.131E+00	0.973E-01	-0.896E-01	-0.229E+00	-0.367E+00	-0.500E+00
0.500E+00	0.392E+00	0.304E+00	0.231E+00	0.174E+00	0.129E+00	0.951E-01	-0.877E-01	-0.228E+00	-0.366E+00	-0.500E+00
0.500E+00	0.391E+00	0.302E+00	0.229E+00	0.171E+00	0.126E+00	0.922E-01	-0.863E-01	-0.226E+00	-0.364E+00	-0.500E+00
0.500E+00	0.390E+00	0.299E+00	0.226E+00	0.168E+00	0.122E+00	0.883E-01	-0.883E-01	-0.220E+00	-0.361E+00	-0.500E+00
0.500E+00	0.388E+00	0.296E+00	0.222E+00	0.163E+00	0.117E+00	0.829E-01	-0.937E-01	-0.210E+00	-0.355E+00	-0.500E+00
0.500E+00	0.386E+00	0.292E+00	0.216E+00	0.156E+00	0.109E+00	0.751E-01	-0.860E-01	-0.198E+00	-0.339E+00	-0.500E+00
0.500E+00	0.386E+00	0.289E+00	0.208E+00	0.144E+00	0.976E-01	0.839E-01	-0.345E-01	-0.170E+00	-0.305E+00	-0.500E+00
0.500E+00	0.396E+00	0.285E+00	0.193E+00	0.125E+00	0.786E-01	0.475E-01	0.281E-01	-0.117E+00	-0.231E+00	-0.281E+00

A = 1.00 R = 1.0 TIME = 0.008

VELOCITY IN X DIRECTION

0.000E+00	-0.176E+01	-0.131E+01	-0.966E+00	-0.708E+00	-0.515E+00	-0.277E+01	-0.159E+01	-0.780E+00	-0.261E+00	0.000E+00
0.000E+00	-0.166E+01	-0.123E+01	-0.911E+00	-0.667E+00	-0.484E+00	-0.275E+01	-0.191E+02	-0.247E+02	-0.963E+00	0.000E+00
0.000E+00	-0.263E+01	-0.168E+01	-0.108E+01	-0.692E+00	-0.439E+00	-0.268E+01	-0.659E-02	0.219E+01	0.302E+01	0.000E+00
0.000E+00	0.112E+01	0.660E+00	0.382E+00	0.217E+00	0.119E+00	-0.235E+01	0.194E+00	0.699E-01	0.318E+00	0.000E+00
0.000E+00	-0.171E+00	-0.143E+00	-0.116E+00	-0.928E-01	-0.723E-01	-0.248E+01	0.120E+00	0.192E-01	0.612E-02	0.000E+00
0.000E+00	-0.171E+00	-0.141E+00	-0.115E+00	-0.909E-01	-0.700E-01	-0.252E+01	0.890E-01	0.267E-01	0.623E-02	0.000E+00
0.000E+00	-0.170E+00	-0.140E+00	-0.113E+00	-0.880E-01	-0.671E-01	-0.259E+01	-0.105E+00	0.405E-01	0.535E-02	0.000E+00
0.000E+00	-0.169E+00	-0.140E+00	-0.109E+00	-0.842E-01	-0.630E-01	-0.275E+01	-0.917E+00	-0.167E+00	0.514E-02	0.000E+00
0.000E+00	-0.175E+00	-0.137E+00	-0.105E+00	-0.789E-01	-0.566E-01	-0.305E+01	-0.358E+01	-0.164E+01	-0.423E-01	0.000E+00
0.000E+00	-0.179E+00	-0.131E+00	-0.995E-01	-0.693E-01	-0.470E-01	-0.356E+01	-0.107E+02	-0.639E+01	-0.281E+00	0.000E+00
0.000E+00	0.153E+01	0.101E+01	0.650E+00	0.406E+00	0.246E+00	0.145E+00	-0.362E+01	-0.438E+01	-0.918E-02	0.000E+00

VELOCITY IN Y DIRECTION

0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0.839E+00	0.745E+00	0.584E+00	0.456E+00	0.352E+00	0.267E+00	0.624E+00	0.785E+01	0.188E+02	0.102E+01	0.132E+00
0.349E+01	0.346E+01	0.238E+01	0.162E+01	0.110E+01	0.741E+00	0.919E+00	0.629E+00	0.127E+02	-0.293E+01	0.437E+00
0.108E+00	-0.127E+01	-0.739E+00	-0.419E+00	-0.229E+00	-0.117E+00	0.374E+00	0.284E+00	0.203E+00	-0.240E+01	-0.107E+01
0.504E+00	0.405E+00	0.321E+00	0.250E+00	0.193E+00	0.147E+00	0.542E+00	0.386E+00	0.265E+00	0.128E+00	-0.306E-03
0.508E+00	0.408E+00	0.323E+00	0.252E+00	0.194E+00	0.147E+00	0.550E+00	0.406E+00	0.259E+00	0.129E+00	-0.669E-03
0.514E+00	0.412E+00	0.327E+00	0.254E+00	0.194E+00	0.146E+00	0.564E+00	0.504E+00	0.260E+00	0.132E+00	-0.185E-02
0.525E+00	0.420E+00	0.333E+00	0.258E+00	0.196E+00	0.146E+00	0.581E+00	0.851E+00	0.414E+00	0.136E+00	-0.416E-02
0.535E+00	0.437E+00	0.342E+00	0.263E+00	0.197E+00	0.143E+00	0.595E+00	0.185E+01	0.125E+01	0.182E+00	-0.919E-02
0.555E+00	0.455E+00	0.358E+00	0.272E+00	0.197E+00	0.138E+00	0.596E+00	0.432E+01	0.350E+01	0.334E+00	-0.294E-01
0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

TEMPERATURE VALUES

0.500E+00	0.391E+00	0.306E+00	0.238E+00	0.184E+00	0.141E+00	0.310E-01	-0.973E-01	-0.229E+00	-0.319E+00	-0.277E+00
0.500E+00	0.393E+00	0.308E+00	0.240E+00	0.185E+00	0.141E+00	0.309E-01	-0.797E-01	-0.228E+00	-0.353E+00	-0.500E+00
0.500E+00	0.398E+00	0.313E+00	0.243E+00	0.187E+00	0.142E+00	0.332E-01	-0.108E+00	-0.192E+00	-0.367E+00	-0.500E+00
0.500E+00	0.399E+00	0.314E+00	0.244E+00	0.187E+00	0.142E+00	0.343E-01	-0.107E+00	-0.239E+00	-0.362E+00	-0.500E+00
0.500E+00	0.398E+00	0.313E+00	0.242E+00	0.185E+00	0.140E+00	0.368E-01	-0.107E+00	-0.238E+00	-0.370E+00	-0.500E+00
0.500E+00	0.397E+00	0.311E+00	0.241E+00	0.183E+00	0.138E+00	0.430E-01	-0.107E+00	-0.234E+00	-0.368E+00	-0.500E+00
0.500E+00	0.396E+00	0.310E+00	0.238E+00	0.180E+00	0.134E+00	0.541E-01	-0.101E+00	-0.230E+00	-0.364E+00	-0.500E+00
0.500E+00	0.395E+00	0.308E+00	0.235E+00	0.177E+00	0.130E+00	0.690E-01	-0.842E-01	-0.221E+00	-0.357E+00	-0.500E+00
0.500E+00	0.395E+00	0.306E+00	0.232E+00	0.172E+00	0.124E+00	0.807E-01	-0.567E-01	-0.199E+00	-0.342E+00	-0.500E+00
0.500E+00	0.398E+00	0.307E+00	0.228E+00	0.164E+00	0.114E+00	0.792E-01	-0.131E-01	-0.148E+00	-0.308E+00	-0.500E+00
0.500E+00	0.416E+00	0.313E+00	0.221E+00	0.150E+00	0.984E-01	0.631E-01	0.882E-01	-0.115E-01	-0.234E+00	-0.261E+00

A = 1.00 R = 1.0 TIME = 0.009

VELOCITY IN X DIRECTION

0.000E+00	-0.191E+01	-0.143E+01	-0.107E+01	-0.798E+00	-0.588E+00	-0.315E+01	-0.148E+01	-0.722E+00	-0.251E+00	0.000E+00
0.000E+00	-0.185E+01	-0.138E+01	-0.103E+01	-0.764E+00	-0.560E+00	-0.870E-01	0.689E+02	0.369E+02	0.482E+00	0.000E+00
0.000E+00	0.332E+01	-0.224E+01	-0.149E+01	-0.983E+00	-0.638E+00	-0.102E+00	-0.157E+00	-0.284E+02	-0.429E+01	0.000E+00
0.000E+00	0.442E+01	0.278E+01	0.174E+01	0.108E+01	0.668E+00	0.709E+00	0.348E+00	0.205E+00	0.569E+01	0.000E+00
0.000E+00	-0.474E+00	-0.332E+00	-0.235E+00	-0.168E+00	-0.120E+00	0.243E+00	0.503E-01	0.267E-01	-0.147E-02	0.000E+00
0.000E+00	-0.183E+00	-0.139E+00	-0.114E+00	-0.915E-01	-0.721E-01	0.368E+00	0.891E-01	0.164E-01	0.369E-02	0.000E+00
0.000E+00	-0.164E+00	-0.139E+00	-0.112E+00	-0.899E-01	-0.698E-01	0.660E+00	0.358E+00	-0.175E-01	0.446E-02	0.000E+00
0.000E+00	-0.169E+00	-0.137E+00	-0.111E+00	-0.875E-01	-0.664E-01	0.143E+01	0.185E+01	0.230E+00	0.473E-02	0.000E+00
0.000E+00	-0.167E+00	-0.137E+00	-0.110E+00	-0.832E-01	-0.615E-01	0.328E+01	0.750E+01	0.216E+01	0.488E-01	0.000E+00
0.000E+00	-0.165E+00	-0.143E+00	-0.105E+00	-0.766E-01	-0.538E-01	0.745E+01	0.228E+02	0.791E+01	0.245E+00	0.000E+00
0.000E+00	0.171E+01	0.118E+01	0.792E+00	0.512E+00	0.323E+00	0.411E+01	0.153E+02	0.691E+01	0.427E+00	0.000E+00

VELOCITY IN Y DIRECTION

0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0.898E+00	0.809E+00	0.634E+00	0.493E+00	0.380E+00	0.290E+00	0.592E+00	-0.365E+02	-0.299E+02	-0.432E+00	0.125E+0
0.423E+01	0.211E+01	0.164E+01	0.124E+01	0.911E+00	0.660E+00	0.851E+00	0.623E+00	-0.143E+02	0.457E+01	0.411E+00
-0.160E+01	-0.141E+01	-0.906E+00	-0.570E+00	-0.347E+00	-0.201E+00	0.267E+00	0.234E+00	0.157E+00	0.901E+00	0.142E+0
0.506E+00	0.722E+00	0.523E+00	0.381E+00	0.279E+00	0.204E+00	0.511E+00	0.393E+00	0.258E+00	0.131E+00	0.365E+00
0.510E+00	0.414E+00	0.332E+00	0.263E+00	0.205E+00	0.158E+00	0.443E+00	0.355E+00	0.262E+00	0.126E+00	-0.982E-03
0.515E+00	0.419E+00	0.336E+00	0.266E+00	0.207E+00	0.158E+00	0.344E+00	0.193E+00	0.271E+00	0.127E+00	-0.184E-02
0.522E+00	0.428E+00	0.342E+00	0.271E+00	0.209E+00	0.159E+00	0.127E+00	-0.535E+00	0.797E-01	0.129E+00	-0.401E-02
0.539E+00	0.437E+00	0.355E+00	0.279E+00	0.213E+00	0.159E+00	-0.326E+00	-0.294E+01	-0.104E+01	0.994E-01	-0.101E-01
0.575E+00	0.463E+00	0.376E+00	0.289E+00	0.217E+00	0.156E+00	-0.125E+01	-0.891E+01	-0.371E+01	0.463E-02	-0.282E-01
0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

TEMPERATURE VALUES

0.500E+00	0.394E+00	0.312E+00	0.246E+00	0.192E+00	0.149E+00	0.248E-02	-0.146E+00	-0.253E+00	-0.328E+00	-0.279E+00
0.500E+00	0.396E+00	0.314E+00	0.247E+00	0.193E+00	0.150E+00	-0.730E-02	-0.176E+00	-0.280E+00	-0.363E+00	-0.500E+00
0.500E+00	0.400E+00	0.319E+00	0.251E+00	0.196E+00	0.151E+00	-0.304E-02	-0.123E+00	-0.236E+00	-0.362E+00	-0.500E+00
0.500E+00	0.407E+00	0.324E+00	0.255E+00	0.198E+00	0.152E+00	-0.139E-03	-0.121E+00	-0.247E+00	-0.363E+00	-0.500E+00
0.500E+00	0.403E+00	0.321E+00	0.252E+00	0.196E+00	0.150E+00	-0.287E-03	-0.119E+00	-0.246E+00	-0.374E+00	-0.500E+00
0.500E+00	0.403E+00	0.320E+00	0.251E+00	0.194E+00	0.148E+00	-0.266E-02	-0.115E+00	-0.243E+00	-0.372E+00	-0.500E+00
0.500E+00	0.402E+00	0.319E+00	0.249E+00	0.192E+00	0.146E+00	-0.731E-02	-0.110E+00	-0.238E+00	-0.370E+00	-0.500E+00
0.500E+00	0.402E+00	0.318E+00	0.248E+00	0.190E+00	0.143E+00	-0.628E-02	-0.109E+00	-0.229E+00	-0.365E+00	-0.500E+00
0.500E+00	0.403E+00	0.320E+00	0.248E+00	0.187E+00	0.138E+00	0.161E-01	-0.114E+00	-0.215E+00	-0.353E+00	-0.500E+00
0.500E+00	0.409E+00	0.325E+00	0.248E+00	0.183E+00	0.131E+00	0.592E-01	-0.123E+00	-0.193E+00	-0.318E+00	-0.500E+00
0.500E+00	0.434E+00	0.339E+00	0.249E+00	0.175E+00	0.119E+00	0.796E-01	-0.763E-01	0.171E+00	-0.239E+00	-0.263E+00

A = 1.00 R = 1.0 TIME = 0.010

VELOCITY IN X DIRECTION

0.000E+00	-0.206E+01	-0.156E+01	-0.118E+01	-0.886E+00	-0.395E+01	-0.253E+01	-0.140E+01	-0.652E+00	-0.224E+00	0.000E+00
0.000E+00	-0.203E+01	-0.153E+01	-0.115E+01	-0.858E+00	-0.393E+01	-0.422E+02	-0.198E+03	-0.548E+02	-0.932E+00	0.000E+00
0.000E+00	-0.213E+01	-0.159E+01	-0.115E+01	-0.823E+00	-0.389E+01	-0.175E+00	-0.739E+02	0.850E+02	0.451E+01	0.000E+00
0.000E+00	0.494E+01	0.332E+01	0.221E+01	0.144E+01	-0.239E+01	0.803E+00	0.428E+00	0.434E+02	-0.834E+01	0.000E+00
0.000E+00	-0.225E+01	-0.145E+01	-0.947E+00	-0.617E+00	-0.374E+01	-0.798E-01	-0.963E-01	-0.621E-01	-0.347E+01	0.000E+00
0.000E+00	-0.158E+00	-0.135E+00	-0.113E+00	-0.926E-01	-0.347E+01	-0.923E-01	0.320E-01	0.398E-01	0.142E-01	0.000E+00
0.000E+00	-0.160E+00	-0.135E+00	-0.113E+00	-0.916E-01	-0.357E+01	-0.889E+00	-0.322E+00	0.800E-01	0.213E-01	0.000E+00
0.000E+00	-0.159E+00	-0.138E+00	-0.113E+00	-0.902E-01	-0.375E+01	-0.338E+01	-0.287E+01	-0.231E+00	0.319E-01	0.000E+00
0.000E+00	-0.165E+00	-0.142E+00	-0.112E+00	-0.886E-01	-0.407E+01	-0.103E+02	-0.133E+02	-0.266E+01	-0.717E-02	0.000E+00
0.000E+00	-0.190E+00	-0.142E+00	-0.114E+00	-0.851E-01	-0.460E+01	-0.271E+02	-0.402E+02	-0.900E+01	-0.186E+00	0.000E+00
0.000E+00	0.192E+01	0.136E+01	0.936E+00	0.626E+00	0.408E+00	-0.732E+01	-0.245E+02	-0.526E+01	0.127E+00	0.000E+00

VELOCITY IN Y DIRECTION

0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0.971E+00	0.828E+00	0.651E+00	0.508E+00	0.396E+00	0.759E+00	0.136E+02	0.122E+03	0.460E+02	0.984E+00	0.122E+00
0.240E+01	0.114E+00	0.401E+00	0.490E+00	0.487E+00	0.894E+00	0.707E+00	0.101E+03	-0.347E+01	-0.426E+01	0.378E+00
-0.171E+01	0.458E+01	0.276E+01	0.168E+01	0.103E+01	0.110E+01	0.747E+00	0.523E+00	-0.433E+02	0.573E+01	0.138E+01
0.901E+00	0.667E+00	0.510E+00	0.388E+00	0.292E+00	0.681E+00	0.534E+00	0.392E+00	0.255E+00	0.320E+01	0.419E-01
0.509E+00	0.420E+00	0.340E+00	0.272E+00	0.215E+00	0.638E+00	0.598E+00	0.381E+00	0.227E+00	0.114E+00	-0.522E-03
0.515E+00	0.424E+00	0.344E+00	0.276E+00	0.218E+00	0.650E+00	0.908E+00	0.616E+00	0.216E+00	0.109E+00	-0.127E-02
0.527E+00	0.430E+00	0.353E+00	0.282E+00	0.222E+00	0.663E+00	0.176E+01	0.194E+01	0.458E+00	0.102E+00	-0.339E-02
0.540E+00	0.448E+00	0.365E+00	0.291E+00	0.228E+00	0.672E+00	0.392E+01	0.670E+01	0.189E+01	0.136E+00	-0.962E-02
0.538E+00	0.475E+00	0.384E+00	0.308E+00	0.235E+00	0.675E+00	0.886E+01	0.175E+02	0.467E+01	0.240E+00	-0.311E-01
0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

TEMPERATURE VALUES

0.500E+00	0.397E+00	0.317E+00	0.252E+00	0.199E+00	0.107E+00	-0.190E-01	-0.174E+00	-0.298E+00	-0.352E+00	-0.285E+00
0.500E+00	0.399E+00	0.319E+00	0.254E+00	0.201E+00	0.109E+00	-0.112E-01	-0.205E+00	-0.297E+00	-0.374E+00	-0.500E+00
0.500E+00	0.402E+00	0.324E+00	0.258E+00	0.204E+00	0.114E+00	-0.184E-01	-0.101E+00	-0.239E+00	-0.366E+00	-0.500E+00
0.500E+00	0.416E+00	0.335E+00	0.265E+00	0.208E+00	0.120E+00	-0.144E-01	-0.130E+00	-0.232E+00	-0.359E+00	-0.500E+00
0.500E+00	0.407E+00	0.328E+00	0.261E+00	0.205E+00	0.122E+00	-0.153E-01	-0.129E+00	-0.254E+00	-0.378E+00	-0.500E+00
0.500E+00	0.407E+00	0.328E+00	0.261E+00	0.204E+00	0.129E+00	-0.109E-01	-0.128E+00	-0.253E+00	-0.384E+00	-0.500E+00
0.500E+00	0.407E+00	0.328E+00	0.260E+00	0.203E+00	0.138E+00	0.382E-03	-0.125E+00	-0.256E+00	-0.389E+00	-0.500E+00
0.500E+00	0.408E+00	0.328E+00	0.260E+00	0.203E+00	0.147E+00	0.195E-01	-0.122E+00	-0.264E+00	-0.394E+00	-0.500E+00
0.500E+00	0.410E+00	0.332E+00	0.263E+00	0.202E+00	0.151E+00	0.477E-01	-0.119E+00	-0.273E+00	-0.388E+00	-0.500E+00
0.500E+00	0.420E+00	0.342E+00	0.268E+00	0.202E+00	0.149E+00	0.999E-01	-0.927E-01	-0.249E+00	-0.346E+00	-0.500E+00
0.500E+00	0.451E+00	0.363E+00	0.275E+00	0.200E+00	0.140E+00	0.196E+00	0.276E+00	-0.471E-01	-0.251E+00	-0.265E+00

A = 1.00 R = 10.0 TIME = 0.001

VELOCITY IN X DIRECTION

0.000E+00	-0.311E+01	-0.193E+01	-0.120E+01	-0.749E+00	-0.464E+00	-0.285E+00	-0.173E+00	-0.103E+00	-0.598E-01	0.000E+00
0.000E+00	-0.311E+01	-0.193E+01	-0.120E+01	-0.748E+00	-0.462E+00	-0.282E+00	-0.170E+00	-0.998E-01	-0.568E-01	0.000E+00
0.000E+00	-0.311E+01	-0.193E+01	-0.120E+01	-0.744E+00	-0.455E+00	-0.273E+00	-0.160E+00	-0.903E-01	-0.490E-01	0.000E+00
0.000E+00	-0.311E+01	-0.193E+01	-0.119E+01	-0.735E+00	-0.441E+00	-0.257E+00	-0.143E+00	-0.767E-01	-0.390E-01	0.000E+00
0.000E+00	-0.311E+01	-0.193E+01	-0.118E+01	-0.713E+00	-0.413E+00	-0.228E+00	-0.119E+00	-0.592E-01	-0.278E-01	0.000E+00
0.000E+00	-0.310E+01	-0.191E+01	-0.115E+01	-0.665E+00	-0.362E+00	-0.185E+00	-0.885E-01	-0.398E-01	-0.169E-01	0.000E+00
0.000E+00	-0.310E+01	-0.187E+01	-0.107E+01	-0.575E+00	-0.283E+00	-0.129E+00	-0.552E-01	-0.221E-01	-0.839E-02	0.000E+00
0.000E+00	-0.306E+01	-0.175E+01	-0.915E+00	-0.430E+00	-0.183E+00	-0.725E-01	-0.267E-01	-0.930E-02	-0.308E-02	0.000E+00
0.000E+00	-0.291E+01	-0.146E+01	-0.636E+00	-0.245E+00	-0.862E-01	-0.282E-01	-0.871E-02	-0.256E-02	-0.729E-03	0.000E+00
0.000E+00	-0.239E+01	-0.890E+00	-0.284E+00	-0.824E-01	-0.224E-01	-0.580E-02	-0.145E-02	-0.353E-03	-0.839E-04	0.000E+00
0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

VELOCITY IN Y DIRECTION

0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0.500E+01	0.311E+01	0.193E+01	0.120E+01	0.748E+00	0.462E+00	0.282E+00	0.170E+00	0.998E-01	0.568E-01	0.000E+00
0.500E+01	0.311E+01	0.193E+01	0.120E+01	0.744E+00	0.455E+00	0.273E+00	0.160E+00	0.903E-01	0.490E-01	0.000E+00
0.500E+01	0.311E+01	0.193E+01	0.119E+01	0.735E+00	0.441E+00	0.257E+00	0.143E+00	0.767E-01	0.390E-01	0.000E+00
0.500E+01	0.311E+01	0.193E+01	0.118E+01	0.713E+00	0.413E+00	0.228E+00	0.119E+00	0.592E-01	0.278E-01	0.000E+00
0.500E+01	0.310E+01	0.191E+01	0.115E+01	0.665E+00	0.362E+00	0.185E+00	0.885E-01	0.398E-01	0.169E-01	0.000E+00
0.500E+01	0.310E+01	0.187E+01	0.107E+01	0.575E+00	0.283E+00	0.129E+00	0.552E-01	0.221E-01	0.839E-02	0.000E+00
0.500E+01	0.306E+01	0.175E+01	0.915E+00	0.430E+00	0.183E+00	0.725E-01	0.267E-01	0.930E-02	0.308E-02	0.000E+00
0.500E+01	0.291E+01	0.146E+01	0.636E+00	0.245E+00	0.862E-01	0.282E-01	0.871E-02	0.256E-02	0.729E-03	0.000E+00
0.500E+01	0.239E+01	0.890E+00	0.284E+00	0.824E-01	0.224E-01	0.580E-02	0.145E-02	0.353E-03	0.839E-04	0.000E+00
0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

TEMPERATURE VALUES

0.500E+00	0.311E+00	0.193E+00	0.120E+00	0.749E-01	0.465E-01	0.287E-01	0.175E-01	0.105E-01	0.622E-02	-0.359E+00
0.500E+00	0.311E+00	0.193E+00	0.120E+00	0.748E-01	0.462E-01	0.282E-01	0.170E-01	0.998E-02	0.568E-02	-0.500E+00
0.500E+00	0.311E+00	0.193E+00	0.120E+00	0.744E-01	0.455E-01	0.273E-01	0.160E-01	0.903E-02	0.490E-02	-0.500E+00
0.500E+00	0.311E+00	0.193E+00	0.119E+00	0.735E-01	0.441E-01	0.257E-01	0.143E-01	0.767E-02	0.390E-02	-0.500E+00
0.500E+00	0.311E+00	0.193E+00	0.118E+00	0.713E-01	0.413E-01	0.228E-01	0.119E-01	0.592E-02	0.278E-02	-0.500E+00
0.500E+00	0.310E+00	0.191E+00	0.115E+00	0.665E-01	0.362E-01	0.185E-01	0.885E-02	0.398E-02	0.169E-02	-0.500E+00
0.500E+00	0.310E+00	0.187E+00	0.107E+00	0.575E-01	0.283E-01	0.129E-01	0.552E-02	0.221E-02	0.839E-03	-0.500E+00
0.500E+00	0.306E+00	0.175E+00	0.915E-01	0.430E-01	0.183E-01	0.725E-02	0.267E-02	0.930E-03	0.308E-03	-0.500E+00
0.500E+00	0.291E+00	0.146E+00	0.636E-01	0.245E-01	0.862E-02	0.282E-02	0.871E-03	0.256E-03	0.729E-04	-0.500E+00
0.500E+00	0.239E+00	0.890E-01	0.284E-01	0.824E-02	0.224E-02	0.580E-03	0.145E-03	0.353E-04	0.839E-05	-0.500E+00
0.500E+00	0.972E-01	0.189E-01	0.367E-02	0.715E-03	0.139E-03	0.270E-04	0.526E-05	0.102E-05	0.199E-06	-0.284E+00

A = 1.00 R = 10.0 TIME = 0.002

VELOCITY IN X DIRECTION

0.000E+00	-0.567E+01	-0.363E+01	-0.233E+01	-0.150E+01	-0.964E+00	-0.612E+00	-0.385E+00	-0.240E+00	-0.308E+01	0.000E+00
0.000E+00	-0.255E+01	-0.169E+01	-0.113E+01	-0.752E+00	-0.495E+00	-0.322E+00	-0.208E+00	-0.134E+00	-0.302E+01	0.000E+00
0.000E+00	-0.255E+01	-0.169E+01	-0.112E+01	-0.739E+00	-0.480E+00	-0.310E+00	-0.200E+00	-0.129E+00	-0.302E+01	0.000E+00
0.000E+00	-0.255E+01	-0.168E+01	-0.110E+01	-0.715E+00	-0.459E+00	-0.295E+00	-0.191E+00	-0.123E+00	-0.301E+01	0.000E+00
0.000E+00	-0.255E+01	-0.166E+01	-0.106E+01	-0.678E+00	-0.434E+00	-0.281E+00	-0.182E+00	-0.114E+00	-0.301E+01	0.000E+00
0.000E+00	-0.253E+01	-0.160E+01	-0.100E+01	-0.635E+00	-0.411E+00	-0.267E+00	-0.168E+00	-0.998E-01	-0.300E+01	0.000E+00
0.000E+00	-0.247E+01	-0.151E+01	-0.928E+00	-0.596E+00	-0.389E+00	0.244E+00	-0.142E+00	-0.760E-01	-0.302E+01	0.000E+00
0.000E+00	-0.234E+01	-0.136E+01	-0.859E+00	-0.563E+00	-0.349E+00	-0.196E+00	-0.999E-01	-0.462E-01	-0.315E+01	0.000E+00
0.000E+00	-0.208E+01	-0.123E+01	-0.804E+00	-0.487E+00	-0.258E+00	-0.121E+00	-0.510E-01	-0.197E-01	-0.374E+01	0.000E+00
0.000E+00	-0.179E+01	-0.113E+01	-0.643E+00	-0.302E+00	-0.122E+00	-0.446E-01	-0.149E-01	-0.468E-02	-0.599E+01	0.000E+00
0.000E+00	0.183E+01	0.522E+00	0.134E+00	0.323E-01	0.752E-02	0.170E-02	0.377E-03	0.824E-04	0.177E-04	0.000E+00

VELOCITY IN Y DIRECTION

0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0.500E+01	0.321E+01	0.210E+01	0.138E+01	0.913E+00	0.597E+00	0.388E+00	0.251E+00	0.162E+00	0.198E+01	0.272E-02
0.500E+01	0.321E+01	0.210E+01	0.138E+01	0.902E+00	0.585E+00	0.378E+00	0.245E+00	0.158E+00	0.198E+01	0.358E-02
0.500E+01	0.321E+01	0.209E+01	0.136E+01	0.884E+00	0.570E+00	0.369E+00	0.238E+00	0.152E+00	0.197E+01	0.418E-02
0.500E+01	0.320E+01	0.207E+01	0.133E+01	0.859E+00	0.555E+00	0.359E+00	0.230E+00	0.142E+00	0.197E+01	0.413E-02
0.500E+01	0.319E+01	0.204E+01	0.129E+01	0.834E+00	0.541E+00	0.347E+00	0.213E+00	0.123E+00	0.196E+01	0.276E-02
0.500E+01	0.315E+01	0.197E+01	0.125E+01	0.815E+00	0.522E+00	0.317E+00	0.178E+00	0.929E-01	0.196E+01	-0.232E-02
0.500E+01	0.308E+01	0.191E+01	0.123E+01	0.788E+00	0.468E+00	0.253E+00	0.124E+00	0.558E-01	0.206E+01	-0.239E-01
0.500E+01	0.298E+01	0.189E+01	0.119E+01	0.680E+00	0.341E+00	0.153E+00	0.624E-01	0.235E-01	0.246E+01	-0.129E+00
0.500E+01	0.302E+01	0.184E+01	0.949E+00	0.415E+00	0.160E+00	0.559E-01	0.182E-01	0.558E-02	0.373E+01	-0.668E+00
0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

TEMPERATURE VALUES

0.500E+00	0.321E+00	0.210E+00	0.139E+00	0.918E-01	0.603E-01	0.393E-01	0.253E-01	0.162E-01	-0.106E+00	-0.250E+00
0.500E+00	0.321E+00	0.210E+00	0.138E+00	0.912E-01	0.595E-01	0.385E-01	0.247E-01	0.158E-01	-0.301E+00	-0.500E+00
0.500E+00	0.321E+00	0.210E+00	0.138E+00	0.900E-01	0.581E-01	0.373E-01	0.239E-01	0.152E-01	-0.302E+00	-0.500E+00
0.500E+00	0.321E+00	0.209E+00	0.136E+00	0.878E-01	0.562E-01	0.359E-01	0.229E-01	0.145E-01	-0.302E+00	-0.500E+00
0.500E+00	0.320E+00	0.207E+00	0.133E+00	0.846E-01	0.538E-01	0.343E-01	0.217E-01	0.133E-01	-0.303E+00	-0.500E+00
0.500E+00	0.319E+00	0.203E+00	0.127E+00	0.806E-01	0.513E-01	0.323E-01	0.197E-01	0.113E-01	-0.304E+00	-0.500E+00
0.500E+00	0.315E+00	0.195E+00	0.121E+00	0.764E-01	0.480E-01	0.288E-01	0.162E-01	0.844E-02	-0.303E+00	-0.500E+00
0.500E+00	0.305E+00	0.183E+00	0.114E+00	0.708E-01	0.417E-01	0.225E-01	0.110E-01	0.501E-02	-0.294E+00	-0.500E+00
0.500E+00	0.289E+00	0.171E+00	0.104E+00	0.586E-01	0.295E-01	0.133E-01	0.549E-02	0.209E-02	-0.254E+00	-0.500E+00
0.500E+00	0.269E+00	0.151E+00	0.773E-01	0.341E-01	0.133E-01	0.475E-02	0.156E-02	0.486E-03	-0.126E+00	-0.500E+00
0.500E+00	0.214E+00	0.793E-01	0.255E-01	0.751E-02	0.206E-02	0.538E-03	0.135E-03	0.332E-04	0.972E-01	-0.220E+00

A = 1.00 R = 10.0 TIME = 0.003

VELOCITY IN X DIRECTION

0.000E+00	-0.781E+01	-0.515E+01	-0.342E+01	-0.227E+01	-0.149E+01	-0.983E+00	-0.641E+00	-0.415E+00	-0.600E+01	0.000E+00
0.000E+00	-0.532E+01	-0.350E+01	-0.230E+01	-0.151E+01	-0.999E+00	-0.658E+00	-0.432E+00	-0.280E+00	0.580E+00	0.000E+00
0.000E+00	-0.221E+01	-0.155E+01	-0.108E+01	-0.755E+00	-0.527E+00	-0.367E+00	-0.252E+00	-0.169E+00	0.610E+00	0.000E+00
0.000E+00	-0.220E+01	-0.153E+01	-0.106E+01	-0.743E+00	-0.522E+00	-0.361E+00	-0.243E+00	-0.160E+00	0.595E+00	0.000E+00
0.000E+00	-0.217E+01	-0.149E+01	-0.104E+01	-0.736E+00	-0.515E+00	-0.348E+00	-0.228E+00	-0.147E+00	0.575E+00	0.000E+00
0.000E+00	-0.213E+01	-0.145E+01	-0.103E+01	-0.730E+00	-0.497E+00	-0.324E+00	-0.208E+00	-0.133E+00	0.543E+00	0.000E+00
0.000E+00	-0.206E+01	-0.143E+01	-0.103E+01	-0.706E+00	-0.457E+00	-0.290E+00	-0.185E+00	-0.116E+00	0.501E+00	0.000E+00
0.000E+00	-0.200E+01	-0.145E+01	-0.100E+01	-0.641E+00	-0.401E+00	-0.253E+00	-0.156E+00	-0.916E-01	0.547E+00	0.000E+00
0.000E+00	-0.204E+01	-0.144E+01	-0.896E+00	-0.544E+00	-0.337E+00	-0.202E+00	-0.112E+00	-0.567E-01	0.125E+01	0.000E+00
0.000E+00	-0.214E+01	-0.126E+01	-0.722E+00	-0.427E+00	-0.238E+00	-0.119E+00	-0.535E-01	-0.219E-01	0.460E+01	0.000E+00
0.000E+00	0.410E+01	0.189E+01	0.748E+00	0.262E+00	0.837E-01	0.250E-01	0.708E-02	0.192E-02	0.865E+01	0.000E+00

VELOCITY IN Y DIRECTION

0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0.500E+01	0.646E+01	0.422E+01	0.277E+01	0.182E+01	0.120E+01	0.789E+00	0.516E+00	0.334E+00	0.163E+01	0.294E+01
0.500E+01	0.334E+01	0.227E+01	0.155E+01	0.106E+01	0.733E+00	0.502E+00	0.339E+00	0.225E+00	0.157E+01	-0.971E-03
0.500E+01	0.334E+01	0.226E+01	0.154E+01	0.106E+01	0.732E+00	0.497E+00	0.331E+00	0.217E+00	0.157E+01	-0.211E-03
0.500E+01	0.333E+01	0.225E+01	0.154E+01	0.106E+01	0.728E+00	0.486E+00	0.318E+00	0.206E+00	0.158E+01	0.683E-03
0.500E+01	0.331E+01	0.224E+01	0.155E+01	0.106E+01	0.712E+00	0.466E+00	0.300E+00	0.192E+00	0.160E+01	-0.104E-02
0.500E+01	0.330E+01	0.227E+01	0.156E+01	0.104E+01	0.680E+00	0.438E+00	0.278E+00	0.171E+00	0.162E+01	-0.115E-01
0.500E+01	0.335E+01	0.232E+01	0.155E+01	0.999E+00	0.638E+00	0.401E+00	0.241E+00	0.135E+00	0.158E+01	-0.369E-01
0.503E+01	0.350E+01	0.234E+01	0.148E+01	0.934E+00	0.573E+00	0.329E+00	0.173E+00	0.830E-01	0.115E+01	-0.592E-01
0.518E+01	0.370E+01	0.228E+01	0.138E+01	0.799E+00	0.416E+00	0.194E+00	0.820E-01	0.319E-01	-0.573E+00	-0.357E-01
0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

TEMPERATURE VALUES

0.500E+00	0.323E+00	0.220E+00	0.152E+00	0.105E+00	0.725E-01	0.494E-01	0.335E-01	0.226E-01	-0.265E+00	-0.274E+00
0.500E+00	0.334E+00	0.228E+00	0.156E+00	0.106E+00	0.728E-01	0.496E-01	0.336E-01	0.225E-01	-0.343E+00	-0.500E+00
0.500E+00	0.334E+00	0.227E+00	0.154E+00	0.105E+00	0.720E-01	0.490E-01	0.329E-01	0.218E-01	-0.343E+00	-0.500E+00
0.500E+00	0.334E+00	0.225E+00	0.153E+00	0.104E+00	0.711E-01	0.480E-01	0.318E-01	0.207E-01	-0.342E+00	-0.500E+00
0.500E+00	0.332E+00	0.223E+00	0.151E+00	0.103E+00	0.699E-01	0.464E-01	0.302E-01	0.194E-01	-0.342E+00	-0.500E+00
0.500E+00	0.329E+00	0.220E+00	0.149E+00	0.101E+00	0.675E-01	0.438E-01	0.280E-01	0.176E-01	-0.340E+00	-0.500E+00
0.500E+00	0.325E+00	0.217E+00	0.147E+00	0.981E-01	0.633E-01	0.402E-01	0.251E-01	0.153E-01	-0.335E+00	-0.500E+00
0.500E+00	0.322E+00	0.216E+00	0.143E+00	0.915E-01	0.575E-01	0.354E-01	0.210E-01	0.117E-01	-0.329E+00	-0.500E+00
0.500E+00	0.321E+00	0.211E+00	0.133E+00	0.819E-01	0.489E-01	0.276E-01	0.144E-01	0.693E-02	-0.331E+00	-0.500E+00
0.500E+00	0.319E+00	0.197E+00	0.116E+00	0.647E-01	0.331E-01	0.153E-01	0.653E-02	0.256E-02	-0.343E+00	-0.500E+00
0.500E+00	0.318E+00	0.182E+00	0.728E-01	0.292E-01	0.107E-01	0.365E-02	0.116E-02	0.355E-03	-0.109E+00	-0.211E+00

A = 1.00 R = 10.0 TIME = 0.004

VELOCITY IN X DIRECTION

0.000E+00	-0.961E+01	-0.649E+01	-0.442E+01	-0.301E+01	-0.205E+01	-0.138E+01	-0.932E+00	-0.909E+01	-0.173E+01	0.000E+00
0.000E+00	-0.935E+01	-0.615E+01	-0.408E+01	-0.271E+01	-0.180E+01	-0.119E+01	-0.779E+00	-0.899E+01	-0.102E+02	0.000E+00
0.000E+00	-0.197E+01	-0.146E+01	-0.107E+01	-0.794E+00	-0.578E+00	-0.412E+00	-0.290E+00	-0.870E+01	0.422E+00	0.000E+00
0.000E+00	-0.195E+01	-0.144E+01	-0.107E+01	-0.794E+00	-0.571E+00	-0.404E+00	-0.284E+00	-0.871E+01	0.414E+00	0.000E+00
0.000E+00	-0.193E+01	-0.144E+01	-0.108E+01	-0.788E+00	-0.560E+00	-0.395E+00	-0.278E+00	-0.872E+01	0.399E+00	0.000E+00
0.000E+00	-0.192E+01	-0.146E+01	-0.108E+01	-0.772E+00	-0.548E+00	-0.388E+00	-0.268E+00	-0.878E+01	0.396E+00	0.000E+00
0.000E+00	-0.194E+01	-0.148E+01	-0.106E+01	-0.758E+00	-0.542E+00	-0.376E+00	-0.248E+00	-0.897E+01	0.455E+00	0.000E+00
0.000E+00	-0.201E+01	-0.146E+01	-0.104E+01	-0.759E+00	-0.527E+00	-0.342E+00	-0.213E+00	-0.956E+01	0.549E+00	0.000E+00
0.000E+00	-0.204E+01	-0.145E+01	-0.107E+01	-0.744E+00	-0.467E+00	-0.281E+00	-0.167E+00	-0.112E+02	-0.615E-01	0.000E+00
0.000E+00	-0.201E+01	-0.157E+01	-0.107E+01	-0.831E+00	-0.355E+00	-0.198E+00	-0.106E+00	-0.153E+02	-0.426E+01	0.000E+00
0.000E+00	0.860E+01	0.345E+01	0.172E+01	0.794E+00	0.334E+00	0.129E+00	0.466E-01	0.157E-01	-0.232E+01	0.000E+00

VELOCITY IN Y DIRECTION

0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0.894E+01	0.832E+01	0.556E+01	0.376E+01	0.255E+01	0.172E+01	0.115E+01	0.767E+00	0.353E+01	0.118E+02	0.188E+01
0.500E+01	0.347E+01	0.244E+01	0.173E+01	0.123E+01	0.871E+00	0.610E+00	0.424E+00	0.333E+01	0.131E+01	0.233E-03
0.500E+01	0.346E+01	0.244E+01	0.174E+01	0.123E+01	0.869E+00	0.607E+00	0.422E+00	0.333E+01	0.132E+01	-0.158E-02
0.500E+01	0.346E+01	0.245E+01	0.175E+01	0.123E+01	0.865E+00	0.605E+00	0.419E+00	0.334E+01	0.133E+01	-0.474E-02
0.500E+01	0.349E+01	0.248E+01	0.175E+01	0.123E+01	0.868E+00	0.605E+00	0.411E+00	0.336E+01	0.133E+01	-0.743E-02
0.502E+01	0.354E+01	0.251E+01	0.176E+01	0.124E+01	0.876E+00	0.596E+00	0.391E+00	0.345E+01	0.129E+01	-0.515E-02
0.507E+01	0.362E+01	0.253E+01	0.180E+01	0.127E+01	0.868E+00	0.563E+00	0.355E+00	0.368E+01	0.127E+01	0.301E-02
0.522E+01	0.370E+01	0.264E+01	0.190E+01	0.128E+01	0.815E+00	0.501E+00	0.298E+00	0.420E+01	0.178E+01	-0.462E-01
0.557E+01	0.394E+01	0.294E+01	0.195E+01	0.119E+01	0.696E+00	0.385E+00	0.199E+00	0.494E+01	0.445E+01	-0.504E+00
0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

TEMPERATURE VALUES

0.500E+00	0.322E+00	0.224E+00	0.160E+00	0.115E+00	0.827E-01	0.588E-01	0.413E-01	-0.131E+00	-0.324E+00	-0.281E+00
0.500E+00	0.337E+00	0.237E+00	0.168E+00	0.120E+00	0.852E-01	0.599E-01	0.417E-01	-0.168E+00	-0.266E+00	-0.500E+00
0.500E+00	0.346E+00	0.243E+00	0.171E+00	0.121E+00	0.855E-01	0.597E-01	0.413E-01	-0.167E+00	-0.368E+00	-0.500E+00
0.500E+00	0.345E+00	0.242E+00	0.171E+00	0.121E+00	0.847E-01	0.588E-01	0.406E-01	-0.168E+00	-0.367E+00	-0.500E+00
0.500E+00	0.344E+00	0.241E+00	0.170E+00	0.120E+00	0.836E-01	0.579E-01	0.397E-01	-0.167E+00	-0.365E+00	-0.500E+00
0.500E+00	0.343E+00	0.241E+00	0.169E+00	0.118E+00	0.826E-01	0.568E-01	0.383E-01	-0.165E+00	-0.365E+00	-0.500E+00
0.500E+00	0.343E+00	0.241E+00	0.168E+00	0.117E+00	0.813E-01	0.547E-01	0.356E-01	-0.157E+00	-0.367E+00	-0.500E+00
0.500E+00	0.344E+00	0.240E+00	0.168E+00	0.116E+00	0.784E-01	0.505E-01	0.315E-01	-0.134E+00	-0.373E+00	-0.500E+00
0.500E+00	0.346E+00	0.244E+00	0.170E+00	0.113E+00	0.715E-01	0.433E-01	0.253E-01	-0.826E-01	-0.366E+00	-0.500E+00
0.500E+00	0.380E+00	0.256E+00	0.167E+00	0.101E+00	0.579E-01	0.313E-01	0.159E-01	-0.795E-02	-0.272E+00	-0.500E+00
0.500E+00	0.420E+00	0.263E+00	0.143E+00	0.704E-01	0.318E-01	0.133E-01	0.522E-02	0.208E-01	0.273E-01	-0.227E+00

A = 1.00 R = 10.0 TIME = 0.005

VELOCITY IN X DIRECTION

0.000E+00	-0.111E+02	-0.766E+01	-0.535E+01	-0.374E+01	-0.261E+01	-0.181E+01	-0.124E+01	-0.125E+02	-0.242E+01	0.000E+00
0.000E+00	-0.118E+02	-0.803E+01	-0.547E+01	-0.372E+01	-0.251E+01	-0.169E+01	-0.113E+01	0.178E+01	0.509E+01	0.000E+00
0.000E+00	0.130E+01	0.525E+00	0.118E+00	-0.711E-01	-0.146E+00	-0.166E+00	-0.158E+00	0.233E+01	0.363E+00	0.000E+00
0.000E+00	-0.180E+01	-0.141E+01	-0.108E+01	-0.817E+00	-0.611E+00	-0.455E+00	-0.332E+00	0.218E+01	0.313E+00	0.000E+00
0.000E+00	-0.181E+01	-0.143E+01	-0.108E+01	-0.821E+00	-0.620E+00	-0.459E+00	-0.331E+00	0.213E+01	0.348E+00	0.000E+00
0.000E+00	-0.184E+01	-0.143E+01	-0.109E+01	-0.842E+00	-0.635E+00	-0.460E+00	-0.326E+00	0.211E+01	0.406E+00	0.000E+00
0.000E+00	-0.187E+01	-0.144E+01	-0.113E+01	-0.880E+00	-0.644E+00	-0.457E+00	-0.318E+00	0.237E+01	0.430E+00	0.000E+00
0.000E+00	-0.187E+01	-0.152E+01	-0.122E+01	-0.911E+00	-0.646E+00	-0.449E+00	-0.300E+00	0.378E+01	0.337E+00	0.000E+00
0.000E+00	-0.196E+01	-0.173E+01	-0.132E+01	-0.933E+00	-0.641E+00	-0.418E+00	-0.257E+00	0.866E+01	0.662E+00	0.000E+00
0.000E+00	-0.248E+01	-0.199E+01	-0.139E+01	-0.938E+00	-0.579E+00	-0.332E+00	-0.183E+00	0.210E+02	0.416E+01	0.000E+00
0.000E+00	0.913E+01	0.557E+01	0.309E+01	0.181E+01	0.797E+00	0.371E+00	0.162E+00	0.190E+02	0.866E+01	0.000E+00

VELOCITY IN Y DIRECTION

0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0.112E+02	0.758E+01	0.531E+01	0.377E+01	0.268E+01	0.188E+01	0.132E+01	0.922E+00	0.257E+01	-0.586E+01	0.110E+01
0.500E+01	0.358E+01	0.260E+01	0.189E+01	0.137E+01	0.993E+00	0.719E+00	0.517E+00	0.235E+01	0.111E+01	-0.151E+01
0.500E+01	0.359E+01	0.261E+01	0.189E+01	0.137E+01	0.100E+01	0.724E+00	0.518E+00	0.237E+01	0.110E+01	-0.991E-03
0.501E+01	0.361E+01	0.262E+01	0.190E+01	0.139E+01	0.101E+01	0.733E+00	0.520E+00	0.239E+01	0.109E+01	0.100E-02
0.503E+01	0.364E+01	0.264E+01	0.193E+01	0.142E+01	0.103E+01	0.742E+00	0.523E+00	0.237E+01	0.106E+01	0.459E-02
0.508E+01	0.367E+01	0.268E+01	0.200E+01	0.147E+01	0.106E+01	0.753E+00	0.523E+00	0.217E+01	0.104E+01	0.441E-02
0.518E+01	0.372E+01	0.281E+01	0.211E+01	0.153E+01	0.109E+01	0.761E+00	0.508E+00	0.134E+01	0.106E+01	-0.271E-01
0.531E+01	0.392E+01	0.305E+01	0.226E+01	0.162E+01	0.112E+01	0.737E+00	0.459E+00	-0.931E+00	0.690E+00	-0.142E+00
0.537E+01	0.447E+01	0.343E+01	0.251E+01	0.171E+01	0.108E+01	0.640E+00	0.362E+00	-0.535E+01	-0.143E+01	-0.400E+00
0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

TEMPERATURE VALUES

0.500E+00	0.318E+00	0.225E+00	0.165E+00	0.122E+00	0.907E-01	0.664E-01	0.481E-01	-0.192E+00	-0.354E+00	-0.287E+00
0.500E+00	0.336E+00	0.240E+00	0.176E+00	0.129E+00	0.945E-01	0.685E-01	0.493E-01	-0.269E+00	-0.419E+00	-0.500E+00
0.500E+00	0.357E+00	0.258E+00	0.187E+00	0.135E+00	0.976E-01	0.702E-01	0.502E-01	-0.265E+00	-0.388E+00	-0.500E+00
0.500E+00	0.356E+00	0.257E+00	0.187E+00	0.135E+00	0.977E-01	0.703E-01	0.500E-01	-0.263E+00	-0.388E+00	-0.500E+00
0.500E+00	0.356E+00	0.258E+00	0.186E+00	0.135E+00	0.983E-01	0.704E-01	0.498E-01	0.260E+00	-0.389E+00	-0.500E+00
0.500E+00	0.357E+00	0.258E+00	0.187E+00	0.137E+00	0.992E-01	0.705E-01	0.493E-01	-0.257E+00	-0.393E+00	-0.500E+00
0.500E+00	0.357E+00	0.260E+00	0.191E+00	0.140E+00	0.100E+00	0.703E-01	0.482E-01	-0.262E+00	-0.398E+00	-0.500E+00
0.500E+00	0.360E+00	0.267E+00	0.199E+00	0.144E+00	0.101E+00	0.692E-01	0.456E-01	-0.294E+00	-0.397E+00	-0.500E+00
0.500E+00	0.372E+00	0.285E+00	0.210E+00	0.148E+00	0.100E+00	0.648E-01	0.399E-01	-0.363E+00	-0.375E+00	-0.500E+00
0.500E+00	0.409E+00	0.318E+00	0.226E+00	0.149E+00	0.925E-01	0.540E-01	0.301E-01	-0.363E+00	-0.310E+00	-0.500E+00
0.500E+00	0.517E+00	0.374E+00	0.234E+00	0.132E+00	0.688E-01	0.335E-01	0.153E-01	-0.104E-01	-0.128E+00	-0.231E+00

A = 1.00 R = 10.0 TIME = 0.006

VELOCITY IN X DIRECTION

0.000E+00	-0.124E+02	-0.871E+01	-0.621E+01	-0.444E+01	-0.316E+01	-0.224E+01	-0.171E+02	-0.455E+01	-0.152E+01	0.000E+00
0.000E+00	-0.125E+02	-0.880E+01	-0.619E+01	-0.434E+01	-0.303E+01	-0.211E+01	-0.170E+02	-0.631E+02	-0.886E+01	0.000E+00
0.000E+00	0.244E+01	0.132E+01	0.700E+00	0.328E+00	0.105E+00	-0.177E-01	-0.157E+02	0.138E+01	0.171E+02	0.000E+00
0.000E+00	-0.171E+01	-0.137E+01	-0.108E+01	-0.853E+00	-0.663E+00	-0.505E+00	-0.161E+02	0.121E+01	0.358E+00	0.000E+00
0.000E+00	-0.173E+01	-0.138E+01	-0.111E+01	-0.883E+00	-0.683E+00	-0.519E+00	-0.161E+02	0.126E+01	0.394E+00	0.000E+00
0.000E+00	-0.173E+01	-0.141E+01	-0.116E+01	-0.924E+00	-0.712E+00	-0.542E+00	-0.164E+02	0.142E+01	0.460E+00	0.000E+00
0.000E+00	-0.175E+01	-0.151E+01	-0.124E+01	-0.982E+00	-0.761E+00	-0.571E+00	-0.169E+02	0.153E+01	0.586E+00	0.000E+00
0.000E+00	-0.189E+01	-0.168E+01	-0.136E+01	-0.108E+01	-0.826E+00	-0.593E+00	-0.181E+02	0.134E+00	0.809E+00	0.000E+00
0.000E+00	-0.222E+01	-0.191E+01	-0.158E+01	-0.123E+01	-0.876E+00	-0.592E+00	-0.207E+02	-0.802E+01	0.490E+00	0.000E+00
0.000E+00	-0.265E+01	-0.239E+01	-0.192E+01	-0.134E+01	-0.877E+00	-0.544E+00	-0.256E+02	-0.337E+02	-0.335E+01	0.000E+00
0.000E+00	0.121E+02	0.794E+01	0.492E+01	0.284E+01	0.154E+01	0.799E+00	0.394E+00	-0.158E+02	-0.226E+01	0.000E+00

VELOCITY IN Y DIRECTION

0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0.101E+02	0.606E+01	0.448E+01	0.337E+01	0.252E+01	0.189E+01	0.140E+01	0.473E+01	0.368E+02	0.958E+01	0.120E+01
0.500E+01	0.117E+02	0.772E+01	0.511E+01	0.341E+01	0.230E+01	0.156E+01	0.481E+01	0.217E+01	0.833E+00	0.562E+01
0.501E+01	0.370E+01	0.273E+01	0.203E+01	0.152E+01	0.113E+01	0.835E+00	0.437E+01	0.189E+01	0.863E+00	0.176E-02
0.503E+01	0.371E+01	0.275E+01	0.206E+01	0.155E+01	0.115E+01	0.856E+00	0.442E+01	0.186E+01	0.827E+00	0.652E-02
0.507E+01	0.372E+01	0.279E+01	0.212E+01	0.159E+01	0.119E+01	0.891E+00	0.452E+01	0.176E+01	0.752E+00	0.115E-01
0.511E+01	0.377E+01	0.289E+01	0.220E+01	0.167E+01	0.126E+01	0.935E+00	0.470E+01	0.171E+01	0.607E+00	0.794E-02
0.515E+01	0.391E+01	0.303E+01	0.235E+01	0.181E+01	0.136E+01	0.982E+00	0.500E+01	0.247E+01	0.408E+00	-0.133E-01
0.517E+01	0.414E+01	0.329E+01	0.265E+01	0.203E+01	0.146E+01	0.101E+01	0.538E+01	0.619E+01	0.748E+00	-0.878E-01
0.537E+01	0.449E+01	0.394E+01	0.314E+01	0.228E+01	0.155E+01	0.996E+00	0.561E+01	0.163E+02	0.349E+01	-0.475E+00
0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

TEMPERATURE VALUES

0.500E+00	0.313E+00	0.224E+00	0.169E+00	0.128E+00	0.972E-01	0.731E-01	-0.710E-01	-0.368E+00	-0.397E+00	-0.294E+00
0.500E+00	0.332E+00	0.243E+00	0.181E+00	0.136E+00	0.102E+00	0.762E-01	-0.728E-01	-0.238E+00	-0.403E+00	-0.500E+00
0.500E+00	0.370E+00	0.271E+00	0.199E+00	0.147E+00	0.109E+00	0.805E-01	-0.654E-01	-0.306E+00	-0.382E+00	-0.500E+00
0.500E+00	0.366E+00	0.271E+00	0.201E+00	0.149E+00	0.111E+00	0.817E-01	-0.638E-01	-0.305E+00	-0.414E+00	-0.500E+00
0.500E+00	0.366E+00	0.271E+00	0.203E+00	0.151E+00	0.113E+00	0.833E-01	-0.596E-01	-0.307E+00	-0.419E+00	-0.500E+00
0.500E+00	0.367E+00	0.274E+00	0.207E+00	0.155E+00	0.116E+00	0.857E-01	-0.508E-01	-0.319E+00	-0.428E+00	-0.500E+00
0.500E+00	0.370E+00	0.281E+00	0.215E+00	0.162E+00	0.121E+00	0.888E-01	-0.339E-01	-0.347E+00	-0.439E+00	-0.500E+00
0.500E+00	0.378E+00	0.295E+00	0.229E+00	0.174E+00	0.128E+00	0.916E-01	-0.516E-02	-0.381E+00	-0.450E+00	-0.500E+00
0.500E+00	0.399E+00	0.323E+00	0.254E+00	0.191E+00	0.135E+00	0.924E-01	0.310E-01	-0.385E+00	-0.442E+00	-0.500E+00
0.500E+00	0.451E+00	0.382E+00	0.294E+00	0.209E+00	0.138E+00	0.867E-01	0.531E-01	-0.279E+00	-0.351E+00	-0.500E+00
0.500E+00	0.598E+00	0.489E+00	0.342E+00	0.215E+00	0.124E+00	0.676E-01	0.382E-01	0.315E+00	-0.170E-01	-0.223E+00

A = 1.00 R = 10.0 TIME = 0.007

VELOCITY IN X DIRECTION

0.000E+00	-0.135E+02	-0.966E+01	-0.702E+01	-0.512E+01	-0.372E+01	-0.270E+01	-0.178E+02	-0.337E+01	-0.990E+00	0.000E+00
0.000E+00	-0.128E+02	-0.921E+01	-0.668E+01	-0.485E+01	-0.352E+01	-0.253E+01	0.508E+01	0.133E+03	0.556E+01	0.000E+00
0.000E+00	-0.875E+01	-0.548E+01	-0.345E+01	-0.221E+01	-0.144E+01	-0.952E+00	0.590E+01	0.975E+00	-0.331E+02	0.000E+00
0.000E+00	-0.162E+01	-0.134E+01	-0.110E+01	-0.893E+00	-0.709E+00	-0.558E+00	0.609E+01	0.124E+01	0.559E+00	0.000E+00
0.000E+00	-0.163E+01	-0.138E+01	-0.115E+01	-0.935E+00	-0.752E+00	-0.596E+00	0.617E+01	0.146E+01	0.690E+00	0.000E+00
0.000E+00	-0.167E+01	-0.146E+01	-0.122E+01	-0.100E+01	-0.820E+00	-0.644E+00	0.681E+01	0.172E+01	0.871E+00	0.000E+00
0.000E+00	-0.178E+01	-0.157E+01	-0.134E+01	-0.113E+01	-0.913E+00	-0.702E+00	0.912E+01	0.213E+01	0.104E+01	0.000E+00
0.000E+00	-0.196E+01	-0.176E+01	-0.159E+01	-0.132E+01	-0.103E+01	-0.773E+00	0.153E+02	0.459E+01	0.103E+01	0.000E+00
0.000E+00	-0.219E+01	-0.222E+01	-0.196E+01	-0.155E+01	-0.117E+01	-0.837E+00	0.288E+02	0.173E+02	0.117E+01	0.000E+00
0.000E+00	-0.299E+01	-0.301E+01	-0.244E+01	-0.185E+01	-0.130E+01	-0.848E+00	0.523E+02	0.578E+02	0.381E+01	0.000E+00
0.000E+00	0.148E+02	0.108E+02	0.722E+01	0.451E+01	0.267E+01	0.149E+01	0.299E+02	0.475E+02	0.649E+01	0.000E+00

VELOCITY IN Y DIRECTION

0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0.822E+01	0.548E+01	0.413E+01	0.323E+01	0.253E+01	0.197E+01	0.151E+01	0.214E+01	-0.930E+02	-0.572E+01	0.859E+00
0.152E+02	0.270E+02	0.175E+02	0.115E+02	0.758E+01	0.498E+01	0.327E+01	0.339E+01	0.224E+01	0.333E+02	0.666E+01
0.503E+01	0.658E+00	0.915E+00	0.964E+00	0.898E+00	0.786E+00	0.662E+00	0.177E+01	0.120E+01	0.398E+00	-0.213E+01
0.504E+01	0.378E+01	0.288E+01	0.220E+01	0.169E+01	0.129E+01	0.990E+00	0.185E+01	0.117E+01	0.333E+00	0.221E-01
0.506E+01	0.382E+01	0.294E+01	0.226E+01	0.176E+01	0.137E+01	0.104E+01	0.143E+01	0.962E+00	0.139E+00	0.336E-01
0.507E+01	0.390E+01	0.302E+01	0.239E+01	0.190E+01	0.147E+01	0.112E+01	0.166E+00	0.487E+00	-0.801E-01	0.400E-01
0.511E+01	0.398E+01	0.320E+01	0.263E+01	0.210E+01	0.163E+01	0.123E+01	-0.261E+01	-0.145E+01	-0.209E+00	0.382E-02
0.522E+01	0.413E+01	0.361E+01	0.302E+01	0.242E+01	0.186E+01	0.136E+01	-0.708E+01	-0.879E+01	-0.541E+00	-0.172E+00
0.516E+01	0.474E+01	0.436E+01	0.369E+01	0.291E+01	0.212E+01	0.144E+01	-0.121E+02	-0.277E+02	-0.219E+01	-0.633E+00
0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

TEMPERATURE VALUES

0.500E+00	0.309E+00	0.224E+00	0.171E+00	0.133E+00	0.103E+00	0.796E-01	-0.244E+00	-0.467E+00	-0.448E+00	-0.306E+00
0.500E+00	0.329E+00	0.244E+00	0.186E+00	0.143E+00	0.109E+00	0.836E-01	-0.323E+00	-0.634E+00	-0.459E+00	-0.500E+00
0.500E+00	0.383E+00	0.285E+00	0.212E+00	0.159E+00	0.120E+00	0.903E-01	-0.303E+00	-0.362E+00	-0.411E+00	-0.500E+00
0.500E+00	0.374E+00	0.282E+00	0.214E+00	0.163E+00	0.124E+00	0.938E-01	-0.301E+00	-0.368E+00	-0.455E+00	-0.500E+00
0.500E+00	0.375E+00	0.285E+00	0.218E+00	0.167E+00	0.128E+00	0.975E-01	-0.305E+00	-0.385E+00	-0.469E+00	-0.500E+00
0.500E+00	0.378E+00	0.291E+00	0.225E+00	0.175E+00	0.135E+00	0.102E+00	-0.332E+00	-0.416E+00	-0.490E+00	-0.500E+00
0.500E+00	0.383E+00	0.301E+00	0.239E+00	0.188E+00	0.145E+00	0.109E+00	-0.411E+00	-0.463E+00	-0.516E+00	-0.500E+00
0.500E+00	0.396E+00	0.323E+00	0.263E+00	0.208E+00	0.160E+00	0.118E+00	-0.563E+00	-0.517E+00	-0.531E+00	-0.500E+00
0.500E+00	0.424E+00	0.366E+00	0.303E+00	0.238E+00	0.178E+00	0.127E+00	-0.695E+00	-0.560E+00	-0.510E+00	-0.500E+00
0.500E+00	0.494E+00	0.448E+00	0.367E+00	0.278E+00	0.196E+00	0.130E+00	-0.489E+00	-0.578E+00	-0.409E+00	-0.500E+00
0.500E+00	0.670E+00	0.597E+00	0.461E+00	0.319E+00	0.202E+00	0.119E+00	0.672E-01	-0.441E+00	-0.134E+00	-0.245E+00

A = 1.00 R = 10.0 TIME = 0.008

VELOCITY IN X DIRECTION

0.000E+00	-0.145E+02	-0.105E+02	-0.781E+01	-0.580E+01	-0.430E+01	-0.266E+02	-0.603E+01	0.107E+01	0.259E+00	0.000E+00
0.000E+00	-0.136E+02	-0.998E+01	-0.743E+01	-0.553E+01	-0.408E+01	-0.266E+02	-0.189E+03	-0.245E+03	-0.743E+01	0.000E+00
0.000E+00	-0.262E+02	-0.168E+02	-0.107E+02	-0.688E+01	0.436E+01	-0.266E+02	0.185E+01	0.258E+02	0.308E+02	0.000E+00
0.000E+00	0.114E+02	0.667E+01	0.384E+01	0.215E+01	0.115E+01	-0.233E+02	0.404E+01	0.234E+01	0.379E+01	0.000E+00
0.000E+00	-0.159E+01	-0.138E+01	-0.118E+01	-0.100E+01	-0.838E+00	-0.248E+02	0.379E+01	0.228E+01	0.127E+01	0.000E+00
0.000E+00	-0.166E+01	-0.147E+01	-0.130E+01	-0.112E+01	-0.936E+00	-0.252E+02	0.428E+01	0.303E+01	0.162E+01	0.000E+00
0.000E+00	-0.175E+01	-0.164E+01	-0.151E+01	-0.130E+01	-0.108E+01	-0.262E+02	0.294E+01	0.410E+01	0.207E+01	0.000E+00
0.000E+00	-0.193E+01	-0.199E+01	-0.181E+01	-0.156E+01	-0.128E+01	-0.280E+02	-0.633E+01	0.278E+01	0.284E+01	0.000E+00
0.000E+00	-0.248E+01	-0.253E+01	-0.229E+01	-0.195E+01	-0.153E+01	-0.312E+02	-0.374E+02	-0.129E+02	0.353E+01	0.000E+00
0.000E+00	-0.345E+01	-0.341E+01	-0.309E+01	-0.246E+01	-0.181E+01	-0.366E+02	-0.111E+03	-0.660E+02	0.818E+00	0.000E+00
0.000E+00	0.181E+02	0.138E+02	0.996E+01	0.670E+01	0.424E+01	0.255E+01	-0.431E+02	-0.567E+02	-0.196E+01	0.000E+00

VELOCITY IN Y DIRECTION

0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0.760E+01	0.592E+01	0.445E+01	0.350E+01	0.276E+01	0.215E+01	0.575E+01	0.768E+02	0.185E+03	0.734E+01	0.704E+00
0.342E+02	0.314E+02	0.214E+02	0.145E+02	0.985E+01	0.662E+01	0.864E+01	0.273E+01	0.119E+03	-0.324E+02	0.352E+01
0.108E+01	-0.125E+02	-0.729E+01	-0.419E+01	-0.232E+01	-0.119E+01	0.368E+01	-0.384E+00	-0.274E+00	-0.245E+02	-0.102E+02
0.503E+01	0.386E+01	0.298E+01	0.233E+01	0.183E+01	0.143E+01	0.538E+01	0.263E+00	-0.583E-01	-0.559E+00	0.559E-01
0.504E+01	0.389E+01	0.304E+01	0.242E+01	0.193E+01	0.153E+01	0.557E+01	-0.122E+00	-0.731E+00	-0.989E+00	0.717E-01
0.507E+01	0.392E+01	0.316E+01	0.258E+01	0.210E+01	0.169E+01	0.585E+01	0.181E+00	-0.159E+01	-0.160E+01	0.611E-01
0.510E+01	0.402E+01	0.340E+01	0.285E+01	0.238E+01	0.193E+01	0.624E+01	0.336E+01	-0.967E+00	0.255E+01	0.397E-02
0.496E+01	0.428E+01	0.378E+01	0.334E+01	0.284E+01	0.228E+01	0.667E+01	0.137E+02	0.684E+01	-0.332E+01	-0.135E+00
0.466E+01	0.464E+01	0.460E+01	0.424E+01	0.354E+01	0.275E+01	0.702E+01	0.369E+02	0.289E+02	-0.144E+01	-0.628E+00
0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

TEMPERATURE VALUES

0.500E+00	0.306E+00	0.225E+00	0.176E+00	0.139E+00	0.110E+00	-0.990E-02	-0.554E+00	-0.722E+00	-0.566E+00	-0.332E+00
0.500E+00	0.329E+00	0.248E+00	0.193E+00	0.151E+00	0.117E+00	0.806E-03	-0.393E+00	-0.798E+00	-0.507E+00	-0.500E+00
0.500E+00	0.393E+00	0.299E+00	0.226E+00	0.171E+00	0.131E+00	0.214E-01	-0.418E+00	-0.420E+00	-0.506E+00	-0.500E+00
0.500E+00	0.386E+00	0.298E+00	0.230E+00	0.178E+00	0.138E+00	0.284E-01	-0.431E+00	-0.480E+00	-0.523E+00	-0.500E+00
0.500E+00	0.384E+00	0.298E+00	0.234E+00	0.184E+00	0.144E+00	0.393E-01	-0.473E+00	-0.525E+00	-0.565E+00	-0.500E+00
0.500E+00	0.388E+00	0.306E+00	0.245E+00	0.196E+00	0.155E+00	0.575E-01	-0.563E+00	-0.595E+00	-0.611E+00	-0.500E+00
0.500E+00	0.396E+00	0.323E+00	0.265E+00	0.215E+00	0.171E+00	0.857E-01	-0.709E+00	-0.687E+00	-0.672E+00	-0.500E+00
0.500E+00	0.413E+00	0.353E+00	0.298E+00	0.245E+00	0.195E+00	0.123E+00	-0.879E+00	-0.793E+00	-0.751E+00	-0.500E+00
0.500E+00	0.451E+00	0.408E+00	0.353E+00	0.290E+00	0.226E+00	0.162E+00	-0.944E+00	-0.952E+00	-0.833E+00	-0.500E+00
0.500E+00	0.532E+00	0.509E+00	0.442E+00	0.354E+00	0.265E+00	0.189E+00	-0.588E+00	-0.123E+01	-0.762E+00	-0.500E+00
0.500E+00	0.721E+00	0.692E+00	0.579E+00	0.437E+00	0.302E+00	0.194E+00	0.507E+00	0.317E+00	-0.243E+00	-0.269E+00

A = 1.00 R = 10.0 TIME = 0.009

VELOCITY IN X DIRECTION

0.000E+00	-0.154E+02	-0.114E+02	-0.864E+01	-0.652E+01	-0.491E+01	-0.162E+02	0.229E+02	0.334E+01	0.350E+01	0.000E+00
0.000E+00	-0.149E+02	-0.111E+02	-0.842E+01	-0.632E+01	-0.472E+01	0.161E+02	0.770E+03	0.374E+03	0.108E+02	0.000E+00
0.000E+00	-0.305E+02	-0.207E+02	-0.138E+02	-0.910E+01	-0.592E+01	0.147E+02	0.209E+01	-0.284E+03	-0.381E+02	0.000E+00
0.000E+00	0.425E+02	0.265E+02	0.166E+02	0.102E+02	0.627E+01	0.225E+02	0.766E+01	0.541E+01	0.579E+02	0.000E+00
0.000E+00	-0.466E+01	-0.332E+01	-0.245E+01	-0.184E+01	-0.139E+01	0.198E+02	0.613E+01	0.486E+01	0.292E+01	0.000E+00
0.000E+00	-0.161E+01	-0.153E+01	-0.140E+01	-0.124E+01	-0.107E+01	0.249E+02	0.860E+01	0.632E+01	0.427E+01	0.000E+00
0.000E+00	-0.177E+01	-0.177E+01	-0.165E+01	-0.149E+01	-0.128E+01	0.354E+02	0.148E+02	0.826E+01	0.631E+01	0.000E+00
0.000E+00	-0.212E+01	-0.214E+01	-0.206E+01	-0.186E+01	-0.156E+01	0.537E+02	0.372E+02	0.149E+02	0.874E+01	0.000E+00
0.000E+00	-0.259E+01	-0.280E+01	-0.274E+01	-0.238E+01	-0.195E+01	0.779E+02	0.112E+03	0.432E+02	0.104E+02	0.000E+00
0.000E+00	-0.347E+01	-0.406E+01	-0.369E+01	-0.310E+01	-0.243E+01	0.104E+03	0.306E+03	0.112E+03	0.115E+02	0.000E+00
0.000E+00	0.209E+02	0.172E+02	0.131E+02	0.938E+01	0.633E+01	0.432E+02	0.139E+03	0.644E+02	0.473E+00	0.000E+00

VELOCITY IN Y DIRECTION

0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0.821E+01	0.649E+01	0.490E+01	0.383E+01	0.300E+01	0.235E+01	-0.238E+01	-0.425E+03	-0.307E+03	-0.117E+02	0.244E+0
0.388E+02	0.154E+02	0.124E+02	0.960E+01	0.722E+01	0.537E+01	0.314E+00	0.382E+00	-0.145E+03	0.404E+02	0.344E+01
-0.158E+02	-0.114E+02	-0.728E+01	-0.466E+01	-0.286E+01	-0.164E+01	-0.457E+01	-0.309E+01	-0.260E+01	0.687E+01	0.240E+0
0.503E+01	0.702E+01	0.501E+01	0.366E+01	0.271E+01	0.204E+01	-0.365E+01	-0.276E+01	-0.277E+01	-0.287E+01	0.366E+01
0.504E+01	0.392E+01	0.316E+01	0.256E+01	0.209E+01	0.171E+01	-0.878E+01	-0.487E+01	-0.423E+01	-0.418E+01	0.189E+0
0.501E+01	0.398E+01	0.328E+01	0.274E+01	0.231E+01	0.191E+01	-0.120E+02	-0.945E+01	-0.660E+01	-0.636E+01	0.265E+00
0.491E+01	0.408E+01	0.348E+01	0.307E+01	0.266E+01	0.223E+01	-0.189E+02	-0.221E+02	-0.131E+02	-0.900E+01	0.307E+0
0.479E+01	0.413E+01	0.394E+01	0.365E+01	0.321E+01	0.271E+01	-0.236E+02	-0.581E+02	-0.325E+02	-0.113E+02	0.395E-01
0.460E+01	0.448E+01	0.486E+01	0.463E+01	0.412E+01	0.341E+01	-0.226E+02	-0.146E+03	-0.671E+02	-0.126E+02	-0.997E+0
0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

TEMPERATURE VALUES

0.500E+00	0.306E+00	0.229E+00	0.183E+00	0.147E+00	0.118E+00	-0.687E+00	-0.171E+01	-0.108E+01	-0.783E+00	-0.415E+00
0.500E+00	0.333E+00	0.257E+00	0.203E+00	0.161E+00	0.128E+00	-0.783E+00	-0.461E+01	-0.196E+00	-0.971E+00	-0.500E+00
0.500E+00	0.398E+00	0.315E+00	0.243E+00	0.187E+00	0.144E+00	-0.731E+00	-0.651E+00	-0.169E+01	-0.868E+00	-0.500E+00
0.500E+00	0.432E+00	0.337E+00	0.258E+00	0.199E+00	0.155E+00	-0.744E+00	-0.705E+00	-0.705E+00	-0.642E+00	-0.500E+00
0.500E+00	0.391E+00	0.311E+00	0.250E+00	0.201E+00	0.162E+00	-0.863E+00	-0.835E+00	-0.819E+00	-0.793E+00	-0.500E+00
0.500E+00	0.397E+00	0.323E+00	0.265E+00	0.218E+00	0.177E+00	-0.110E+01	-0.103E+01	-0.987E+00	-0.943E+00	-0.500E+00
0.500E+00	0.409E+00	0.344E+00	0.291E+00	0.244E+00	0.200E+00	0.153E+01	-0.131E+01	-0.124E+01	-0.116E+01	-0.500E+00
0.500E+00	0.431E+00	0.382E+00	0.334E+00	0.284E+00	0.234E+00	-0.200E+01	-0.165E+01	-0.168E+01	-0.144E+01	-0.500E+00
0.500E+00	0.475E+00	0.449E+00	0.404E+00	0.344E+00	0.280E+00	-0.200E+01	-0.243E+01	-0.230E+01	-0.163E+01	-0.500E+00
0.500E+00	0.567E+00	0.567E+00	0.514E+00	0.433E+00	0.343E+00	-0.940E+00	-0.532E+01	-0.252E+01	-0.149E+01	-0.500E+00
0.500E+00	0.764E+00	0.767E+00	0.686E+00	0.560E+00	0.419E+00	0.291E+00	-0.223E+01	-0.262E+01	-0.711E+00	-0.381E+00

A = 1.00 R = 10.0 TIME = 0.010

VELOCITY IN X DIRECTION

0.000E+00	-0.164E+02	-0.124E+02	-0.958E+01	-0.735E+01	-0.375E+02	0.374E+01	0.461E+02	-0.133E+03	-0.238E+02	0.000E+00
0.000E+00	-0.163E+02	-0.124E+02	-0.943E+01	-0.717E+01	-0.375E+02	-0.420E+03	0.211E+04	-0.688E+03	0.422E+01	0.000E+00
0.000E+00	-0.161E+02	-0.128E+02	-0.955E+01	-0.695E+01	-0.377E+02	0.969E+01	-0.698E+03	0.113E+04	0.920E+02	0.000E+00
0.000E+00	0.417E+02	0.279E+02	0.186E+02	0.121E+02	-0.252E+02	0.182E+02	0.133E+02	0.426E+03	-0.808E+02	0.000E+00
0.000E+00	-0.220E+02	-0.143E+02	-0.941E+01	-0.628E+01	-0.373E+02	0.139E+02	0.123E+02	0.119E+02	-0.218E+02	0.000E+00
0.000E+00	-0.164E+01	-0.159E+01	-0.150E+01	-0.138E+01	-0.349E+02	0.170E+02	0.192E+02	0.213E+02	0.199E+02	0.000E+00
0.000E+00	-0.183E+01	-0.185E+01	-0.183E+01	-0.170E+01	-0.362E+02	0.104E+02	0.268E+02	0.386E+02	0.324E+02	0.000E+00
0.000E+00	-0.209E+01	-0.234E+01	-0.235E+01	-0.215E+01	-0.386E+02	-0.190E+02	0.268E+02	0.640E+02	0.465E+02	0.000E+00
0.000E+00	-0.270E+01	-0.319E+01	-0.310E+01	-0.282E+01	-0.424E+02	-0.969E+02	-0.135E+02	0.676E+02	0.519E+02	0.000E+00
0.000E+00	-0.416E+01	-0.438E+01	0.427E+01	-0.377E+01	-0.484E+02	-0.254E+03	-0.158E+03	-0.884E+01	0.367E+02	0.000E+00
0.000E+00	0.242E+02	0.207E+02	0.165E+02	0.125E+02	0.895E+01	-0.851E+02	-0.336E+03	-0.982E+02	-0.125E+02	0.000E+00

VELOCITY IN Y DIRECTION

0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0.888E+01	0.663E+01	0.509E+01	0.403E+01	0.322E+01	0.686E+01	0.127E+03	0.131E+04	0.603E+03	-0.435E+01	0.607E+00
0.175E+02	-0.453E+01	0.489E-02	0.216E+01	0.305E+01	0.766E+01	-0.792E+01	0.978E+03	-0.339E+03	-0.982E+02	0.102E+01
-0.145E+02	0.509E+02	0.311E+02	0.190E+02	0.116E+02	0.118E+02	-0.541E+01	-0.545E+01	-0.432E+03	0.529E+02	0.145E+02
0.895E+01	0.596E+01	0.454E+01	0.354E+01	0.276E+01	0.671E+01	-0.114E+02	-0.103E+02	-0.110E+02	0.177E+02	0.739E+00
0.497E+01	0.398E+01	0.322E+01	0.268E+01	0.224E+01	0.652E+01	-0.141E+02	-0.157E+02	-0.194E+02	-0.207E+02	0.640E+00
0.491E+01	0.398E+01	0.334E+01	0.289E+01	0.249E+01	0.690E+01	-0.148E+02	-0.243E+02	0.359E+02	-0.340E+02	0.827E+00
0.484E+01	0.397E+01	0.360E+01	0.325E+01	0.289E+01	0.742E+01	-0.936E+01	-0.380E+02	-0.614E+02	-0.496E+02	0.765E+00
0.458E+01	0.411E+01	0.403E+01	0.384E+01	0.356E+01	0.811E+01	0.107E+02	-0.601E+02	-0.780E+02	-0.571E+02	0.140E+00
0.363E+01	0.444E+01	0.478E+01	0.494E+01	0.462E+01	0.903E+01	0.553E+02	-0.956E+02	-0.504E+02	-0.444E+02	-0.141E+01
0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

TEMPERATURE VALUES

0.500E+00	0.309E+00	0.239E+00	0.196E+00	0.161E+00	0.503E-01	-0.136E+01	-0.510E+01	0.771E+01	0.368E+01	0.632E+00
0.500E+00	0.342E+00	0.275E+00	0.224E+00	0.180E+00	0.730E-01	-0.133E+01	0.357E+01	0.149E+02	-0.169E+01	-0.500E+00
0.500E+00	0.416E+00	0.347E+00	0.274E+00	0.211E+00	0.106E+00	-0.132E+01	-0.111E+01	-0.263E+02	-0.554E+01	-0.500E+00
0.500E+00	0.502E+00	0.411E+00	0.311E+00	0.234E+00	0.140E+00	-0.142E+01	-0.131E+01	-0.125E+01	-0.112E+01	-0.500E+00
0.500E+00	0.394E+00	0.321E+00	0.265E+00	0.219E+00	0.136E+00	-0.182E+01	-0.167E+01	-0.170E+01	-0.176E+01	-0.500E+00
0.500E+00	0.407E+00	0.340E+00	0.286E+00	0.241E+00	0.166E+00	-0.237E+01	-0.226E+01	-0.255E+01	-0.266E+01	-0.500E+00
0.500E+00	0.422E+00	0.366E+00	0.319E+00	0.274E+00	0.208E+00	-0.314E+01	-0.349E+01	-0.424E+01	-0.404E+01	-0.500E+00
0.500E+00	0.448E+00	0.411E+00	0.371E+00	0.324E+00	0.265E+00	-0.380E+01	-0.654E+01	-0.715E+01	-0.561E+01	-0.500E+00
0.500E+00	0.499E+00	0.488E+00	0.453E+00	0.400E+00	0.336E+00	-0.353E+01	-0.145E+02	-0.105E+02	-0.629E+01	-0.500E+00
0.500E+00	0.596E+00	0.617E+00	0.580E+00	0.511E+00	0.425E+00	-0.162E+01	-0.306E+02	-0.107E+02	-0.489E+01	-0.500E+00
0.500E+00	0.791E+00	0.823E+00	0.774E+00	0.673E+00	0.543E+00	0.657E+00	-0.151E+01	-0.458E+01	-0.215E+01	-0.701E+00

A = 0.50 R = 50.0 TIME = 0.001

VELOCITY IN X DIRECTION

0.000E+00	-0.389E+01	-0.151E+00	-0.588E-02	-0.228E-03	-0.885E-05	-0.340E-06	-0.129E-07	-0.480E-09	-0.174E-10	0.000E+00
0.000E+00	-0.389E+01	-0.151E+00	-0.588E-02	-0.228E-03	-0.882E-05	-0.337E-06	-0.126E-07	-0.464E-09	-0.165E-10	0.000E+00
0.000E+00	-0.389E+01	-0.151E+00	-0.587E-02	-0.227E-03	-0.869E-05	-0.326E-06	-0.119E-07	-0.420E-09	-0.142E-10	0.000E+00
0.000E+00	-0.389E+01	-0.151E+00	-0.585E-02	-0.224E-03	-0.842E-05	-0.306E-06	-0.107E-07	-0.357E-09	-0.113E-10	0.000E+00
0.000E+00	-0.388E+01	-0.150E+00	-0.579E-02	-0.217E-03	-0.788E-05	-0.272E-06	-0.890E-08	-0.275E-09	-0.809E-11	0.000E+00
0.000E+00	-0.388E+01	-0.149E+00	-0.564E-02	-0.203E-03	-0.691E-05	-0.220E-06	-0.659E-08	-0.185E-09	-0.494E-11	0.000E+00
0.000E+00	-0.387E+01	-0.146E+00	-0.526E-02	-0.175E-03	-0.541E-05	-0.154E-06	-0.411E-08	-0.103E-09	-0.244E-11	0.000E+00
0.000E+00	-0.382E+01	-0.137E+00	-0.447E-02	-0.131E-03	-0.350E-05	-0.865E-07	-0.199E-08	-0.433E-10	-0.896E-12	0.000E+00
0.000E+00	-0.364E+01	-0.114E+00	-0.310E-02	-0.748E-04	-0.164E-05	-0.336E-07	-0.649E-09	-0.119E-10	-0.212E-12	0.000E+00
0.000E+00	-0.299E+01	-0.695E-01	-0.138E-02	-0.251E-04	-0.427E-06	-0.692E-08	-0.108E-09	-0.164E-11	-0.244E-13	0.000E+00
0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

VELOCITY IN Y DIRECTION

0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0.250E+02	0.972E+00	0.378E-01	0.147E-02	0.570E-04	0.220E-05	0.843E-07	0.316E-08	0.116E-09	0.413E-11	0.000E+00
0.250E+02	0.972E+00	0.378E-01	0.146E-02	0.568E-04	0.217E-05	0.816E-07	0.298E-08	0.105E-09	0.356E-11	0.000E+00
0.250E+02	0.972E+00	0.378E-01	0.146E-02	0.561E-04	0.210E-05	0.765E-07	0.267E-08	0.892E-10	0.284E-11	0.000E+00
0.250E+02	0.972E+00	0.377E-01	0.144E-02	0.544E-04	0.197E-05	0.680E-07	0.222E-08	0.689E-10	0.202E-11	0.000E+00
0.250E+02	0.971E+00	0.374E-01	0.141E-02	0.508E-04	0.172E-05	0.551E-07	0.164E-08	0.464E-10	0.123E-11	0.000E+00
0.250E+02	0.968E+00	0.366E-01	0.131E-02	0.439E-04	0.135E-05	0.386E-07	0.103E-08	0.257E-10	0.610E-12	0.000E+00
0.250E+02	0.957E+00	0.343E-01	0.111E-02	0.328E-04	0.877E-06	0.216E-07	0.498E-09	0.108E-10	0.224E-12	0.000E+00
0.250E+02	0.910E+00	0.286E-01	0.776E-03	0.187E-04	0.411E-06	0.841E-08	0.162E-09	0.299E-11	0.530E-13	0.000E+00
0.250E+02	0.749E+00	0.173E-01	0.347E-03	0.629E-05	0.106E-06	0.173E-08	0.270E-10	0.411E-12	0.611E-14	0.000E+00
0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

TEMPERATURE VALUES

0.500E+00	0.194E-01	0.756E-03	0.294E-04	0.114E-05	0.443E-07	0.171E-08	0.654E-10	0.246E-11	0.906E-13	-0.499E-01
0.500E+00	0.194E-01	0.756E-03	0.294E-04	0.114E-05	0.441E-07	0.168E-08	0.633E-10	0.232E-11	0.826E-13	-0.500E+00
0.500E+00	0.194E-01	0.756E-03	0.293E-04	0.113E-05	0.434E-07	0.163E-08	0.596E-10	0.210E-11	0.713E-13	-0.500E+00
0.500E+00	0.194E-01	0.756E-03	0.292E-04	0.112E-05	0.421E-07	0.153E-08	0.535E-10	0.178E-11	0.568E-13	-0.500E+00
0.500E+00	0.194E-01	0.754E-03	0.289E-04	0.108E-05	0.394E-07	0.136E-08	0.445E-10	0.137E-11	0.404E-13	-0.500E+00
0.500E+00	0.194E-01	0.749E-03	0.282E-04	0.101E-05	0.345E-07	0.110E-08	0.329E-10	0.928E-12	0.247E-13	-0.500E+00
0.500E+00	0.193E-01	0.733E-03	0.263E-04	0.878E-06	0.270E-07	0.773E-09	0.205E-10	0.515E-12	0.122E-13	-0.500E+00
0.500E+00	0.191E-01	0.687E-03	0.223E-04	0.656E-06	0.175E-07	0.432E-09	0.996E-11	0.216E-12	0.448E-14	-0.500E+00
0.500E+00	0.182E-01	0.572E-03	0.155E-04	0.374E-06	0.822E-08	0.168E-09	0.324E-11	0.598E-13	0.106E-14	-0.500E+00
0.500E+00	0.149E-01	0.347E-03	0.694E-05	0.125E-06	0.213E-08	0.346E-10	0.540E-12	0.822E-14	0.122E-15	-0.500E+00
0.500E+00	0.607E-02	0.738E-04	0.897E-06	0.109E-07	0.132E-09	0.161E-11	0.196E-13	0.238E-15	0.289E-17	-0.451E-01

A = 0.50 R = 50.0 TIME = 0.002

VELOCITY IN X DIRECTION

0.000E+00	-0.897E+01	-0.543E+00	-0.287E-01	-0.141E-02	-0.659E-04	-0.297E-05	-0.129E-06	-0.546E-08	-0.176E+03	0.000E+00
0.000E+00	-0.508E+01	-0.391E+00	-0.228E-01	-0.118E-02	-0.570E-04	-0.262E-05	-0.115E-06	-0.488E-08	-0.176E+03	0.000E+00
0.000E+00	-0.508E+01	-0.391E+00	-0.228E-01	-0.117E-02	-0.564E-04	-0.255E-05	-0.110E-06	-0.449E-08	-0.176E+03	0.000E+00
0.000E+00	-0.508E+01	-0.391E+00	-0.227E-01	-0.116E-02	-0.550E-04	-0.243E-05	-0.100E-06	-0.391E-08	-0.176E+03	0.000E+00
0.000E+00	-0.508E+01	-0.391E+00	-0.225E-01	-0.114E-02	-0.523E-04	-0.221E-05	-0.865E-07	-0.314E-08	-0.176E+03	0.000E+00
0.000E+00	-0.508E+01	-0.389E+00	-0.222E-01	-0.108E-02	-0.473E-04	-0.187E-05	-0.676E-07	-0.225E-08	-0.176E+03	0.000E+00
0.000E+00	-0.508E+01	-0.385E+00	-0.212E-01	-0.981E-03	-0.394E-04	-0.141E-05	-0.459E-07	-0.137E-08	-0.176E+03	0.000E+00
0.000E+00	-0.508E+01	-0.376E+00	-0.193E-01	-0.802E-03	-0.284E-04	-0.892E-06	-0.253E-07	-0.663E-09	-0.176E+03	0.000E+00
0.000E+00	-0.515E+01	-0.351E+00	-0.156E-01	-0.545E-03	-0.161E-04	-0.423E-06	-0.101E-07	-0.227E-09	-0.178E+03	0.000E+00
0.000E+00	-0.548E+01	-0.291E+00	-0.973E-02	-0.257E-03	-0.593E-05	-0.124E-06	-0.241E-08	-0.447E-10	-0.184E+03	0.000E+00
0.000E+00	0.228E+01	0.408E-01	0.654E-03	0.988E-05	0.143E-06	0.202E-08	0.281E-10	0.383E-12	0.517E-14	0.000E+00

VELOCITY IN Y DIRECTION

0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0.250E+02	0.205E+01	0.128E+00	0.688E-02	0.341E-03	0.160E-04	0.724E-06	0.315E-07	0.132E-08	0.240E+02	0.286E-05
0.250E+02	0.205E+01	0.128E+00	0.688E-02	0.339E-03	0.158E-04	0.706E-06	0.300E-07	0.121E-08	0.240E+02	-0.467E-04
0.250E+02	0.205E+01	0.128E+00	0.686E-02	0.336E-03	0.155E-04	0.672E-06	0.275E-07	0.106E-08	0.240E+02	-0.172E-03
0.250E+02	0.205E+01	0.128E+00	0.682E-02	0.330E-03	0.147E-04	0.613E-06	0.237E-07	0.854E-09	0.240E+02	-0.911E-03
0.250E+02	0.205E+01	0.127E+00	0.671E-02	0.315E-03	0.134E-04	0.520E-06	0.185E-07	0.614E-09	0.240E+02	-0.474E-02
0.250E+02	0.205E+01	0.126E+00	0.645E-02	0.285E-03	0.111E-04	0.394E-06	0.126E-07	0.375E-09	0.240E+02	-0.245E-01
0.250E+02	0.205E+01	0.123E+00	0.587E-02	0.234E-03	0.810E-05	0.249E-06	0.700E-08	0.181E-09	0.240E+02	-0.126E+00
0.250E+02	0.206E+01	0.116E+00	0.475E-02	0.159E-03	0.460E-05	0.119E-06	0.282E-08	0.624E-10	0.242E+02	-0.650E+00
0.250E+02	0.210E+01	0.941E-01	0.294E-02	0.755E-04	0.170E-05	0.350E-07	0.675E-09	0.123E-10	0.246E+02	-0.334E+01
0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

TEMPERATURE VALUES

0.500E+00	0.410E-01	0.256E-02	0.137E-03	0.682E-05	0.322E-06	0.146E-07	0.644E-09	0.274E-10	-0.729E-02	-0.263E+00
0.500E+00	0.410E-01	0.256E-02	0.137E-03	0.681E-05	0.320E-06	0.144E-07	0.625E-09	0.260E-10	-0.194E-01	-0.500E+00
0.500E+00	0.410E-01	0.256E-02	0.137E-03	0.678E-05	0.315E-06	0.140E-07	0.592E-09	0.238E-10	-0.194E-01	-0.500E+00
0.500E+00	0.410E-01	0.256E-02	0.137E-03	0.670E-05	0.306E-06	0.132E-07	0.536E-09	0.205E-10	-0.194E-01	-0.500E+00
0.500E+00	0.410E-01	0.255E-02	0.135E-03	0.651E-05	0.288E-06	0.118E-07	0.454E-09	0.162E-10	-0.194E-01	-0.500E+00
0.500E+00	0.410E-01	0.254E-02	0.132E-03	0.612E-05	0.257E-06	0.985E-08	0.347E-09	0.113E-10	-0.194E-01	-0.500E+00
0.500E+00	0.408E-01	0.249E-02	0.124E-03	0.539E-05	0.207E-06	0.720E-08	0.228E-09	0.672E-11	-0.192E-01	-0.500E+00
0.500E+00	0.404E-01	0.235E-02	0.108E-03	0.419E-05	0.142E-06	0.432E-08	0.120E-09	0.310E-11	-0.185E-01	-0.500E+00
0.500E+00	0.388E-01	0.202E-02	0.799E-04	0.261E-05	0.744E-07	0.191E-08	0.452E-10	0.100E-11	-0.159E-01	-0.500E+00
0.500E+00	0.338E-01	0.137E-02	0.417E-04	0.106E-05	0.240E-07	0.499E-09	0.974E-11	0.180E-12	-0.789E-02	-0.500E+00
0.500E+00	0.192E-01	0.451E-03	0.883E-05	0.156E-06	0.260E-08	0.413E-10	0.637E-12	0.955E-14	0.607E-02	-0.235E+00

A = 0.50 R = 50.0 TIME = 0.003

VELOCITY IN X DIRECTION

0.000E+00	-0.141E+02	-0.120E+01	-0.816E-01	-0.490E-02	-0.271E-03	-0.141E-04	-0.702E-06	-0.332E-07	0.606E+02	0.000E+00
0.000E+00	-0.211E+02	-0.126E+01	-0.765E-01	-0.440E-02	-0.240E-03	-0.125E-04	-0.619E-06	-0.292E-07	0.237E+03	0.000E+00
0.000E+00	-0.557E+01	-0.661E+00	-0.529E-01	-0.348E-02	-0.203E-03	-0.109E-04	-0.545E-06	-0.254E-07	0.237E+03	0.000E+00
0.000E+00	-0.557E+01	-0.661E+00	-0.528E-01	-0.345E-02	-0.199E-03	-0.104E-04	-0.505E-06	-0.226E-07	0.237E+03	0.000E+00
0.000E+00	-0.557E+01	-0.660E+00	-0.524E-01	-0.339E-02	-0.191E-03	-0.968E-05	-0.445E-06	-0.188E-07	0.237E+03	0.000E+00
0.000E+00	-0.556E+01	-0.657E+00	-0.516E-01	-0.326E-02	-0.176E-03	-0.846E-05	-0.363E-06	-0.141E-07	0.237E+03	0.000E+00
0.000E+00	-0.554E+01	-0.649E+00	-0.499E-01	-0.302E-02	-0.153E-03	-0.674E-05	-0.263E-06	-0.932E-08	0.238E+03	0.000E+00
0.000E+00	-0.547E+01	-0.631E+00	-0.465E-01	-0.260E-02	-0.119E-03	-0.467E-05	-0.161E-06	-0.505E-08	0.237E+03	0.000E+00
0.000E+00	-0.522E+01	-0.594E+00	-0.404E-01	-0.198E-02	-0.777E-04	-0.259E-05	-0.767E-07	-0.206E-08	0.235E+03	0.000E+00
0.000E+00	-0.446E+01	-0.537E+00	-0.306E-01	-0.119E-02	-0.373E-04	-0.100E-05	-0.243E-07	-0.544E-09	0.220E+03	0.000E+00
0.000E+00	0.879E+01	0.304E+00	0.765E-02	0.162E-03	0.312E-05	0.559E-07	0.954E-09	0.156E-10	0.193E+03	0.000E+00

VELOCITY IN Y DIRECTION

0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0.250E+02	0.696E+01	0.421E+00	0.247E-01	0.137E-02	0.732E-04	0.371E-05	0.180E-06	0.839E-08	-0.171E+02	0.807E+02
0.250E+02	0.307E+01	0.269E+00	0.188E-01	0.114E-02	0.638E-04	0.331E-05	0.161E-06	0.742E-08	-0.171E+02	0.257E-03
0.250E+02	0.307E+01	0.269E+00	0.187E-01	0.113E-02	0.626E-04	0.318E-05	0.150E-06	0.662E-08	-0.171E+02	0.802E-03
0.250E+02	0.307E+01	0.269E+00	0.186E-01	0.112E-02	0.603E-04	0.295E-05	0.133E-06	0.552E-08	-0.171E+02	0.310E-02
0.250E+02	0.307E+01	0.268E+00	0.184E-01	0.108E-02	0.580E-04	0.259E-05	0.109E-06	0.418E-08	-0.171E+02	0.128E-01
0.250E+02	0.306E+01	0.266E+00	0.179E-01	0.100E-02	0.488E-04	0.208E-05	0.795E-07	0.276E-08	-0.171E+02	0.478E-01
0.250E+02	0.305E+01	0.261E+00	0.168E-01	0.875E-03	0.382E-04	0.145E-05	0.490E-07	0.150E-08	-0.169E+02	0.139E+00
0.251E+02	0.299E+01	0.249E+00	0.147E-01	0.670E-03	0.251E-04	0.812E-06	0.234E-07	0.620E-09	-0.159E+02	0.145E+00
0.259E+02	0.285E+01	0.227E+00	0.111E-01	0.405E-03	0.121E-04	0.316E-06	0.750E-08	0.164E-09	-0.115E+02	-0.239E+01
0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

TEMPERATURE VALUES

0.500E+00	0.582E-01	0.532E-02	0.375E-03	0.229E-04	0.129E-05	0.680E-07	0.341E-08	0.163E-09	-0.607E+00	-0.350E+00
0.500E+00	0.614E-01	0.539E-02	0.376E-03	0.229E-04	0.128E-05	0.672E-07	0.332E-08	0.156E-09	-0.841E+00	-0.500E+00
0.500E+00	0.614E-01	0.539E-02	0.375E-03	0.228E-04	0.126E-05	0.654E-07	0.316E-08	0.144E-09	-0.842E+00	-0.500E+00
0.500E+00	0.614E-01	0.538E-02	0.374E-03	0.226E-04	0.123E-05	0.621E-07	0.290E-08	0.126E-09	-0.842E+00	-0.500E+00
0.500E+00	0.614E-01	0.537E-02	0.371E-03	0.220E-04	0.117E-05	0.566E-07	0.250E-08	0.102E-09	-0.842E+00	-0.500E+00
0.500E+00	0.613E-01	0.534E-02	0.363E-03	0.209E-04	0.106E-05	0.481E-07	0.197E-08	0.744E-10	-0.842E+00	-0.500E+00
0.500E+00	0.612E-01	0.526E-02	0.346E-03	0.188E-04	0.885E-06	0.366E-07	0.136E-08	0.465E-10	-0.840E+00	-0.500E+00
0.500E+00	0.608E-01	0.507E-02	0.311E-03	0.154E-04	0.645E-06	0.236E-07	0.780E-09	0.235E-10	-0.832E+00	-0.500E+00
0.500E+00	0.600E-01	0.463E-02	0.249E-03	0.105E-04	0.376E-06	0.118E-07	0.334E-09	0.872E-11	-0.785E+00	-0.500E+00
0.500E+00	0.590E-01	0.371E-02	0.156E-03	0.521E-05	0.149E-06	0.381E-08	0.898E-10	0.197E-11	-0.576E+00	-0.500E+00
0.500E+00	0.570E-01	0.203E-02	0.543E-04	0.124E-05	0.261E-07	0.510E-09	0.947E-11	0.168E-12	0.189E-02	-0.250E+00

A = 0.50 R = 50.0 TIME = 0.004

VELOCITY IN X DIRECTION

0.000E+00	-0.178E+02	-0.205E+01	-0.175E+00	-0.126E-01	-0.818E-03	-0.487E-04	-0.272E-05	-0.375E+03	0.152E+03	0.000E+00
0.000E+00	0.174E+02	-0.862E+00	-0.125E+00	-0.101E-01	-0.682E-03	-0.414E-04	-0.233E-05	-0.375E+03	-0.115E+04	0.000E+00
0.000E+00	-0.569E+01	-0.922E+00	-0.957E-01	-0.777E-02	-0.542E-03	-0.339E-04	-0.193E-05	-0.375E+03	0.200E+03	0.000E+00
0.000E+00	-0.569E+01	-0.922E+00	-0.956E-01	-0.773E-02	-0.534E-03	-0.327E-04	-0.182E-05	-0.375E+03	0.200E+03	0.000E+00
0.000E+00	-0.570E+01	-0.923E+00	-0.954E-01	-0.764E-02	-0.517E-03	-0.307E-04	-0.164E-05	-0.375E+03	0.200E+03	0.000E+00
0.000E+00	-0.571E+01	-0.926E+00	-0.950E-01	-0.746E-02	-0.488E-03	-0.276E-04	-0.138E-05	-0.375E+03	0.200E+03	0.000E+00
0.000E+00	-0.578E+01	-0.937E+00	-0.942E-01	-0.711E-02	-0.439E-03	-0.230E-04	-0.106E-05	-0.375E+03	0.198E+03	0.000E+00
0.000E+00	-0.612E+01	-0.970E+00	-0.923E-01	-0.647E-02	-0.364E-03	-0.172E-04	-0.711E-06	-0.376E+03	0.188E+03	0.000E+00
0.000E+00	-0.749E+01	-0.104E+01	-0.873E-01	-0.538E-02	-0.264E-03	-0.108E-04	-0.387E-06	-0.377E+03	0.156E+03	0.000E+00
0.000E+00	-0.119E+02	-0.110E+01	-0.750E-01	-0.381E-02	-0.153E-03	-0.520E-05	-0.154E-06	-0.384E+03	0.675E+02	0.000E+00
0.000E+00	0.128E+02	0.890E+00	0.361E-01	0.110E-02	0.281E-04	0.640E-06	0.134E-07	0.264E-09	-0.215E+02	0.000E+00

VELOCITY IN Y DIRECTION

0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0.447E+02	-0.266E+01	0.405E+00	0.454E-01	0.342E-02	0.221E-03	0.130E-04	0.719E-06	0.249E+02	0.193E+03	-0.219E+03
0.250E+02	0.398E+01	0.452E+00	0.392E-01	0.288E-02	0.187E-03	0.112E-04	0.620E-06	0.249E+02	-0.644E+02	-0.703E-03
0.250E+02	0.398E+01	0.452E+00	0.392E-01	0.286E-02	0.185E-03	0.108E-04	0.586E-06	0.249E+02	-0.644E+02	-0.360E-02
0.250E+02	0.398E+01	0.452E+00	0.391E-01	0.283E-02	0.180E-03	0.102E-04	0.529E-06	0.249E+02	-0.644E+02	-0.186E-01
0.250E+02	0.398E+01	0.452E+00	0.390E-01	0.277E-02	0.170E-03	0.926E-05	0.450E-06	0.249E+02	-0.643E+02	-0.102E+00
0.250E+02	0.400E+01	0.455E+00	0.386E-01	0.265E-02	0.154E-03	0.779E-05	0.348E-06	0.249E+02	-0.640E+02	-0.497E+00
0.250E+02	0.409E+01	0.462E+00	0.377E-01	0.242E-02	0.129E-03	0.587E-05	0.234E-06	0.249E+02	-0.625E+02	-0.216E+01
0.249E+02	0.442E+01	0.476E+00	0.354E-01	0.202E-02	0.943E-04	0.372E-05	0.129E-06	0.249E+02	-0.573E+02	-0.827E+01
0.241E+02	0.549E+01	0.483E+00	0.303E-01	0.144E-02	0.552E-04	0.180E-05	0.518E-07	0.250E+02	-0.419E+02	-0.245E+02
0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

TEMPERATURE VALUES

0.500E+00	0.668E-01	0.854E-02	0.773E-03	0.574E-04	0.378E-05	0.228E-06	0.129E-07	-0.608E-03	-0.112E+01	-0.404E+00
0.500E+00	0.702E-01	0.886E-02	0.783E-03	0.576E-04	0.376E-05	0.226E-06	0.126E-07	-0.756E-03	-0.178E+01	-0.500E+00
0.500E+00	0.796E-01	0.903E-02	0.785E-03	0.574E-04	0.373E-05	0.221E-06	0.121E-07	-0.756E-03	-0.178E+01	-0.500E+00
0.500E+00	0.796E-01	0.903E-02	0.783E-03	0.569E-04	0.365E-05	0.211E-06	0.112E-07	-0.754E-03	-0.178E+01	-0.500E+00
0.500E+00	0.796E-01	0.902E-02	0.778E-03	0.559E-04	0.350E-05	0.195E-06	0.989E-08	-0.750E-03	-0.178E+01	-0.500E+00
0.500E+00	0.796E-01	0.901E-02	0.769E-03	0.538E-04	0.323E-05	0.170E-06	0.807E-08	-0.737E-03	-0.178E+01	-0.500E+00
0.500E+00	0.797E-01	0.898E-02	0.748E-03	0.499E-04	0.280E-05	0.136E-06	0.589E-08	-0.698E-03	-0.178E+01	-0.500E+00
0.500E+00	0.806E-01	0.896E-02	0.707E-03	0.433E-04	0.218E-05	0.950E-07	0.365E-08	-0.595E-03	-0.175E+01	-0.500E+00
0.500E+00	0.846E-01	0.894E-02	0.627E-03	0.332E-04	0.143E-05	0.535E-07	0.177E-08	-0.376E-03	-0.161E+01	-0.500E+00
0.500E+00	0.991E-01	0.877E-02	0.484E-03	0.202E-04	0.703E-06	0.214E-07	0.591E-09	-0.605E-04	-0.109E+01	-0.500E+00
0.500E+00	0.137E+00	0.744E-02	0.265E-03	0.767E-05	0.194E-06	0.449E-08	0.970E-10	0.738E-04	0.461E+00	-0.275E+00

A = 0.50 R = 50.0 TIME = 0.005

VELOCITY IN X DIRECTION

0.000E+00	-0.231E+02	-0.308E+01	-0.318E+00	-0.270E-01	-0.200E-02	-0.135E-03	-0.843E-05	0.206E+04	0.180E+03	0.000E+00
0.000E+00	-0.142E+03	-0.597E+01	-0.366E+00	-0.257E-01	-0.179E-02	-0.118E-03	-0.730E-05	0.244E+04	0.666E+04	0.000E+00
0.000E+00	-0.130E+03	-0.600E+01	-0.337E+00	-0.218E-01	-0.147E-02	-0.962E-04	-0.594E-05	0.244E+04	0.603E+03	0.000E+00
0.000E+00	-0.570E+01	-0.115E+01	-0.148E+00	-0.145E-01	-0.117E-02	-0.832E-04	-0.527E-05	0.244E+04	0.603E+03	0.000E+00
0.000E+00	-0.570E+01	-0.116E+01	-0.149E+00	-0.144E-01	-0.115E-02	-0.795E-04	-0.485E-05	0.244E+04	0.600E+03	0.000E+00
0.000E+00	-0.570E+01	-0.116E+01	-0.149E+00	-0.142E-01	-0.111E-02	-0.734E-04	-0.424E-05	0.243E+04	0.594E+03	0.000E+00
0.000E+00	-0.567E+01	-0.116E+01	-0.150E+00	-0.140E-01	-0.103E-02	-0.642E-04	-0.343E-05	0.239E+04	0.575E+03	0.000E+00
0.000E+00	-0.541E+01	-0.119E+01	-0.154E+00	-0.135E-01	-0.920E-03	-0.515E-04	-0.248E-05	0.225E+04	0.533E+03	0.000E+00
0.000E+00	-0.413E+01	-0.131E+01	-0.161E+00	-0.125E-01	-0.742E-03	-0.362E-04	-0.152E-05	0.189E+04	0.471E+03	0.000E+00
0.000E+00	-0.584E+00	-0.174E+01	-0.168E+00	-0.104E-01	-0.507E-03	-0.206E-04	-0.729E-06	0.117E+04	0.456E+03	0.000E+00
0.000E+00	0.293E+02	0.208E+01	0.111E+00	0.457E-02	0.152E-03	0.436E-05	0.111E-06	0.393E+03	-0.264E+02	0.000E+00

VELOCITY IN Y DIRECTION

0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
-0.188E+02	0.390E+02	0.183E+01	0.121E+00	0.865E-02	0.594E-03	0.384E-04	0.233E-05	-0.410E+03	-0.146E+04	0.696E+03
0.250E+02	0.514E+02	0.248E+01	0.140E+00	0.873E-02	0.557E-03	0.346E-04	0.205E-05	-0.410E+03	-0.202E+03	0.967E+03
0.250E+02	0.478E+01	0.664E+00	0.695E-01	0.598E-02	0.447E-03	0.299E-04	0.182E-05	-0.410E+03	-0.202E+03	0.143E-02
0.250E+02	0.479E+01	0.664E+00	0.695E-01	0.595E-02	0.439E-03	0.286E-04	0.168E-05	-0.409E+03	-0.202E+03	-0.172E-01
0.250E+02	0.478E+01	0.665E+00	0.695E-01	0.589E-02	0.424E-03	0.266E-04	0.147E-05	-0.406E+03	-0.200E+03	-0.743E-01
0.250E+02	0.478E+01	0.668E+00	0.698E-01	0.578E-02	0.397E-03	0.233E-04	0.120E-05	-0.397E+03	-0.195E+03	-0.205E+00
0.250E+02	0.472E+01	0.679E+00	0.704E-01	0.555E-02	0.352E-03	0.188E-04	0.877E-06	-0.367E+03	-0.183E+03	-0.239E+00
0.252E+02	0.447E+01	0.718E+00	0.715E-01	0.507E-02	0.284E-03	0.133E-04	0.542E-06	-0.288E+03	-0.162E+03	0.114E+01
0.268E+02	0.402E+01	0.844E+00	0.710E-01	0.416E-02	0.194E-03	0.764E-05	0.262E-06	-0.141E+03	-0.138E+03	0.434E+00
0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

TEMPERATURE VALUES

0.500E+00	0.790E-01	0.121E-01	0.134E-02	0.118E-03	0.903E-05	0.620E-06	0.392E-07	-0.794E+01	-0.211E+01	-0.457E+00
0.500E+00	0.897E-01	0.125E-01	0.136E-02	0.119E-03	0.903E-05	0.615E-06	0.386E-07	-0.870E+01	0.615E+00	-0.500E+00
0.500E+00	0.957E-01	0.132E-01	0.139E-02	0.119E-03	0.897E-05	0.604E-06	0.372E-07	-0.870E+01	-0.455E+01	-0.500E+00
0.500E+00	0.957E-01	0.132E-01	0.138E-02	0.119E-03	0.883E-05	0.584E-06	0.349E-07	-0.870E+01	-0.455E+01	-0.500E+00
0.500E+00	0.958E-01	0.132E-01	0.138E-02	0.117E-03	0.857E-05	0.549E-06	0.314E-07	-0.868E+01	-0.454E+01	-0.500E+00
0.500E+00	0.959E-01	0.133E-01	0.138E-02	0.115E-03	0.810E-05	0.493E-06	0.266E-07	-0.863E+01	-0.450E+01	-0.500E+00
0.500E+00	0.963E-01	0.134E-01	0.137E-02	0.110E-03	0.732E-05	0.414E-06	0.205E-07	-0.844E+01	-0.437E+01	-0.500E+00
0.500E+00	0.983E-01	0.138E-01	0.137E-02	0.102E-03	0.614E-05	0.311E-06	0.138E-07	-0.783E+01	-0.401E+01	-0.500E+00
0.500E+00	0.106E+00	0.149E-01	0.134E-02	0.876E-04	0.454E-05	0.198E-06	0.762E-08	-0.619E+01	-0.316E+01	-0.500E+00
0.500E+00	0.134E+00	0.170E-01	0.123E-02	0.646E-04	0.271E-05	0.974E-07	0.311E-08	-0.300E+01	-0.168E+01	-0.500E+00
0.500E+00	0.222E+00	0.188E-01	0.940E-03	0.351E-04	0.109E-05	0.300E-07	0.755E-09	0.110E-03	-0.572E-01	-0.263E+00

A = 0.50 R = 50.0 TIME = 0.006

VELOCITY IN X DIRECTION

0.000E+00	-0.353E+02	-0.482E+01	-0.533E+00	-0.509E-01	-0.427E-02	-0.322E-03	-0.575E+03	0.108E+05	0.816E+03	0.000E+00
0.000E+00	0.406E+03	0.762E+01	-0.123E+00	-0.342E-01	-0.339E-02	-0.269E-03	-0.575E+03	0.248E+04	-0.314E+05	0.000E+00
0.000E+00	0.110E+04	0.350E+02	0.943E+00	0.108E-01	-0.129E-02	-0.162E-03	-0.575E+03	0.963E+04	-0.213E+05	0.000E+00
0.000E+00	-0.565E+01	-0.136E+01	-0.210E+00	-0.241E-01	-0.226E-02	-0.183E-03	-0.575E+03	0.966E+04	0.492E+04	0.000E+00
0.000E+00	-0.566E+01	-0.138E+01	-0.212E+00	-0.243E-01	-0.225E-02	-0.177E-03	-0.575E+03	0.974E+04	0.488E+04	0.000E+00
0.000E+00	-0.575E+01	-0.141E+01	-0.217E+00	-0.245E-01	-0.222E-02	-0.169E-03	-0.575E+03	0.992E+04	0.477E+04	0.000E+00
0.000E+00	-0.622E+01	-0.152E+01	-0.228E+00	-0.250E-01	-0.216E-02	-0.154E-03	-0.575E+03	0.102E+05	0.449E+04	0.000E+00
0.000E+00	-0.820E+01	-0.178E+01	-0.248E+00	-0.256E-01	-0.204E-02	-0.133E-03	-0.576E+03	0.102E+05	0.387E+04	0.000E+00
0.000E+00	-0.157E+02	-0.227E+01	-0.278E+00	-0.258E-01	-0.182E-02	-0.104E-03	-0.577E+03	0.869E+04	0.279E+04	0.000E+00
0.000E+00	-0.364E+02	-0.278E+01	-0.315E+00	-0.247E-01	-0.144E-02	-0.690E-04	-0.584E+03	0.484E+04	0.121E+04	0.000E+00
0.000E+00	0.258E+02	0.432E+01	0.295E+00	0.148E-01	0.610E-03	0.212E-04	0.653E-06	-0.411E+03	-0.596E+03	0.000E+00

VELOCITY IN Y DIRECTION

0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0.222E+03	-0.104E+03	-0.164E+01	0.743E-01	0.127E-01	0.118E-02	0.908E-04	0.250E+02	-0.161E+04	0.713E+04	-0.208E+04
0.261E+03	-0.346E+03	-0.102E+02	-0.224E+00	0.163E-02	0.718E-03	0.686E-04	0.250E+02	-0.252E+04	0.621E+04	-0.657E+04
0.250E+02	0.551E+01	0.898E+00	0.110E+00	0.109E-01	0.937E-03	0.707E-04	0.250E+02	-0.253E+04	-0.139E+04	-0.257E+00
0.250E+02	0.551E+01	0.901E+00	0.110E+00	0.110E-01	0.930E-03	0.688E-04	0.250E+02	-0.255E+04	-0.138E+04	-0.774E+00
0.250E+02	0.553E+01	0.910E+00	0.112E+00	0.110E-01	0.916E-03	0.655E-04	0.250E+02	-0.260E+04	-0.135E+04	-0.230E+01
0.249E+02	0.565E+01	0.937E+00	0.114E+00	0.111E-01	0.888E-03	0.601E-04	0.250E+02	-0.268E+04	-0.128E+04	-0.646E+01
0.248E+02	0.613E+01	0.100E+01	0.120E+00	0.111E-01	0.833E-03	0.517E-04	0.250E+02	-0.269E+04	-0.113E+04	-0.167E+02
0.236E+02	0.788E+01	0.113E+01	0.129E+00	0.110E-01	0.735E-03	0.403E-04	0.250E+02	-0.231E+04	-0.858E+03	-0.406E+02
0.158E+02	0.124E+02	0.131E+01	0.140E+00	0.102E-01	0.577E-03	0.267E-04	0.250E+02	-0.131E+04	-0.472E+03	-0.721E+02
0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

TEMPERATURE VALUES

0.500E+00	0.106E+00	0.179E-01	0.217E-02	0.217E-03	0.187E-04	0.144E-05	-0.275E-04	-0.453E+02	-0.873E+01	-0.838E+00
0.500E+00	0.181E+00	0.199E-01	0.220E-02	0.218E-03	0.187E-04	0.143E-05	-0.292E-04	-0.510E+02	-0.132E+01	-0.500E+00
0.500E+00	0.855E-01	0.167E-01	0.217E-02	0.218E-03	0.187E-04	0.142E-05	-0.292E-04	-0.510E+02	-0.284E+02	-0.500E+00
0.500E+00	0.110E+00	0.179E-01	0.220E-02	0.218E-03	0.185E-04	0.138E-05	-0.289E-04	-0.512E+02	-0.283E+02	-0.500E+00
0.500E+00	0.110E+00	0.180E-01	0.221E-02	0.218E-03	0.182E-04	0.132E-05	-0.283E-04	-0.516E+02	-0.281E+02	-0.500E+00
0.500E+00	0.110E+00	0.182E-01	0.224E-02	0.218E-03	0.177E-04	0.123E-05	-0.268E-04	-0.524E+02	-0.275E+02	-0.500E+00
0.500E+00	0.112E+00	0.188E-01	0.230E-02	0.217E-03	0.167E-04	0.108E-05	-0.229E-04	-0.535E+02	-0.259E+02	-0.500E+00
0.500E+00	0.120E+00	0.204E-01	0.242E-02	0.215E-03	0.151E-04	0.884E-06	-0.162E-04	-0.525E+02	-0.226E+02	-0.500E+00
0.500E+00	0.144E+00	0.242E-01	0.262E-02	0.204E-03	0.124E-04	0.633E-06	-0.694E-05	-0.417E+02	-0.170E+02	-0.500E+00
0.500E+00	0.215E+00	0.314E-01	0.278E-02	0.176E-03	0.881E-05	0.370E-06	0.407E-06	-0.168E+02	-0.100E+02	-0.500E+00
0.500E+00	0.387E+00	0.407E-01	0.260E-02	0.123E-03	0.472E-05	0.155E-06	0.902E-06	0.287E+00	-0.504E+00	-0.353E+00

A = 0.50 R = 50.0 TIME = 0.007

VELOCITY IN X DIRECTION

0.000E+00	-0.611E+03	-0.408E+02	-0.200E+01	-0.118E+00	-0.889E-02	-0.698E-03	0.554E+05	0.468E+06	-0.263E+06	0.000E+00
0.000E+00	-0.260E+04	-0.880E+02	-0.296E+01	-0.132E+00	-0.842E-02	-0.621E-03	0.560E+05	0.372E+06	-0.538E+06	0.000E+00
0.000E+00	-0.954E+04	-0.268E+03	-0.829E+01	-0.290E+00	-0.122E-01	-0.645E-03	0.559E+05	0.111E+06	0.424E+06	0.000E+00
0.000E+00	-0.752E+03	-0.305E+02	-0.140E+01	-0.807E-01	-0.564E-02	-0.425E-03	0.558E+05	0.115E+06	0.233E+06	0.000E+00
0.000E+00	-0.557E+01	-0.155E+01	-0.280E+00	-0.374E-01	-0.398E-02	-0.357E-03	0.553E+05	0.126E+06	0.232E+06	0.000E+00
0.000E+00	-0.557E+01	-0.156E+01	-0.289E+00	-0.386E-01	-0.404E-02	-0.350E-03	0.538E+05	0.159E+06	0.225E+06	0.000E+00
0.000E+00	-0.501E+01	-0.157E+01	-0.311E+00	-0.411E-01	-0.412E-02	-0.337E-03	0.501E+05	0.231E+06	0.205E+06	0.000E+00
0.000E+00	-0.204E+01	-0.168E+01	-0.362E+00	-0.452E-01	-0.417E-02	-0.311E-03	0.419E+05	0.326E+06	0.180E+06	0.000E+00
0.000E+00	0.106E+02	-0.234E+01	-0.467E+00	-0.503E-01	-0.408E-02	-0.267E-03	0.274E+05	0.318E+06	0.922E+05	0.000E+00
0.000E+00	0.399E+02	-0.507E+01	-0.621E+00	-0.538E-01	-0.366E-02	-0.202E-03	0.101E+05	0.127E+06	0.297E+05	0.000E+00
0.000E+00	0.713E+02	0.683E+01	0.649E+00	0.410E-01	0.201E-02	0.832E-04	0.593E+03	-0.351E+04	-0.108E+04	0.000E+00

VELOCITY IN Y DIRECTION

0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
-0.670E+03	0.673E+03	0.231E+02	0.828E+00	0.411E-01	0.280E-02	0.209E-03	-0.113E+05	-0.922E+05	0.137E+06	0.726E+04
-0.189E+04	0.281E+04	0.808E+02	0.258E+01	0.970E-01	0.445E-02	0.247E-03	-0.113E+05	-0.284E+05	-0.115E+06	0.337E+05
0.249E+02	0.317E+03	0.132E+02	0.631E+00	0.365E-01	0.247E-02	0.176E-03	-0.112E+05	-0.293E+05	-0.595E+05	0.644E+04
0.249E+02	0.615E+01	0.114E+01	0.162E+00	0.184E-01	0.177E-02	0.147E-03	-0.111E+05	-0.322E+05	-0.591E+05	-0.133E+02
0.249E+02	0.614E+01	0.115E+01	0.164E+00	0.188E-01	0.178E-02	0.144E-03	-0.108E+05	-0.405E+05	-0.575E+05	-0.340E+02
0.249E+02	0.599E+01	0.116E+01	0.171E+00	0.194E-01	0.178E-02	0.137E-03	-0.100E+05	-0.586E+05	-0.524E+05	-0.742E+02
0.249E+02	0.528E+01	0.121E+01	0.187E+00	0.206E-01	0.177E-02	0.126E-03	-0.823E+04	-0.826E+05	-0.412E+05	-0.130E+03
0.261E+02	0.253E+01	0.144E+01	0.219E+00	0.219E-01	0.170E-02	0.107E-03	-0.518E+04	-0.809E+05	-0.238E+05	-0.162E+03
0.399E+02	-0.242E+01	0.224E+01	0.266E+00	0.226E-01	0.149E-02	0.807E-04	-0.172E+04	-0.329E+05	-0.797E+04	-0.138E+03
0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

TEMPERATURE VALUES

0.500E+00	0.169E+01	0.156E+00	0.907E-02	0.550E-03	0.399E-04	0.311E-05	-0.221E+03	-0.100E+04	0.400E+03	0.450E+01
0.500E+00	0.498E+01	0.220E+00	0.835E-02	0.471E-03	0.370E-04	0.302E-05	-0.227E+03	-0.157E+04	0.342E+04	-0.500E+00
0.500E+00	0.902E+01	0.140E+00	0.461E-02	0.380E-03	0.352E-04	0.297E-05	-0.227E+03	-0.569E+03	-0.517E+03	-0.500E+00
0.500E+00	0.123E+00	0.229E-01	0.323E-02	0.366E-03	0.351E-04	0.293E-05	-0.226E+03	-0.587E+03	-0.119E+04	-0.500E+00
0.500E+00	0.123E+00	0.230E-01	0.326E-02	0.370E-03	0.350E-04	0.287E-05	-0.224E+03	-0.647E+03	-0.118E+04	-0.500E+00
0.500E+00	0.124E+00	0.234E-01	0.335E-02	0.377E-03	0.350E-04	0.275E-05	-0.217E+03	-0.813E+03	-0.115E+04	-0.500E+00
0.500E+00	0.126E+00	0.245E-01	0.355E-02	0.392E-03	0.347E-04	0.256E-05	-0.200E+03	-0.117E+04	-0.104E+04	-0.500E+00
0.500E+00	0.132E+00	0.275E-01	0.396E-02	0.413E-03	0.336E-04	0.224E-05	-0.165E+03	-0.165E+04	-0.816E+03	-0.500E+00
0.500E+00	0.149E+00	0.347E-01	0.468E-02	0.433E-03	0.307E-04	0.179E-05	-0.104E+03	-0.159E+04	-0.465E+03	-0.500E+00
0.500E+00	0.210E+00	0.503E-01	0.564E-02	0.428E-03	0.251E-04	0.122E-05	-0.344E+02	-0.613E+03	-0.141E+03	-0.500E+00
0.500E+00	0.458E+00	0.772E-01	0.628E-02	0.362E-03	0.166E-04	0.647E-06	0.312E-05	-0.651E+01	-0.799E+01	-0.516E+00

A = 0.50 R = 50.0 TIME = 0.008

VELOCITY IN X DIRECTION

0.000E+00	-0.934E+04	-0.148E+04	-0.878E+02	-0.343E+01	-0.112E+00	-0.775E+03	0.118E+09	-0.430E+08	0.336E+10	0.000E+00
0.000E+00	-0.114E+05	-0.200E+04	-0.952E+02	-0.304E+01	-0.849E-01	-0.775E+03	0.125E+09	0.349E+09	0.610E+10	0.000E+00
0.000E+00	0.269E+04	-0.202E+04	-0.386E+02	-0.230E+00	0.827E-02	-0.775E+03	0.127E+09	-0.176E+08	-0.741E+10	0.000E+00
0.000E+00	0.127E+05	0.475E+03	0.168E+02	0.557E+00	0.149E-01	-0.775E+03	0.130E+09	-0.983E+07	0.382E+09	0.000E+00
0.000E+00	-0.561E+01	-0.177E+01	-0.362E+00	-0.546E-01	-0.657E-02	-0.775E+03	0.136E+09	0.606E+07	0.385E+09	0.000E+00
0.000E+00	-0.550E+01	-0.189E+01	-0.387E+00	-0.580E-01	-0.688E-02	-0.775E+03	0.140E+09	0.445E+08	0.378E+09	0.000E+00
0.000E+00	-0.807E+01	-0.234E+01	-0.439E+00	-0.643E-01	-0.735E-02	-0.775E+03	0.127E+09	0.159E+09	0.336E+09	0.000E+00
0.000E+00	-0.182E+02	-0.325E+01	-0.533E+00	-0.749E-01	-0.796E-02	-0.776E+03	0.816E+08	0.415E+09	0.233E+09	0.000E+00
0.000E+00	-0.571E+02	-0.421E+01	-0.690E+00	-0.908E-01	-0.851E-02	-0.777E+03	0.231E+08	0.514E+09	0.948E+08	0.000E+00
0.000E+00	-0.138E+03	-0.334E+01	-0.992E+00	-0.110E+00	-0.856E-02	-0.784E+03	0.107E+07	0.137E+09	0.136E+08	0.000E+00
0.000E+00	0.271E+02	0.141E+02	0.132E+01	0.986E-01	0.576E-02	0.277E-03	-0.331E+04	-0.516E+05	-0.137E+05	0.000E+00

VELOCITY IN Y DIRECTION

0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0.259E+04	0.289E+04	0.507E+03	0.241E+02	0.778E+00	0.225E-01	0.250E+02	-0.314E+08	-0.873E+08	-0.152E+10	0.202E+05
0.131E+05	-0.238E+04	0.459E+03	0.834E+01	0.323E-01	-0.145E-02	0.250E+02	-0.318E+08	0.443E+07	0.185E+10	0.764E+06
0.160E+04	-0.463E+04	-0.167E+03	-0.572E+01	-0.178E+00	-0.399E-02	0.250E+02	-0.327E+08	0.249E+07	-0.955E+08	0.123E+06
0.251E+02	0.678E+01	0.141E+01	0.225E+00	0.289E-01	0.310E-02	0.250E+02	-0.341E+08	-0.148E+07	-0.964E+08	-0.960E+03
0.250E+02	0.673E+01	0.144E+01	0.232E+00	0.299E-01	0.319E-02	0.250E+02	-0.350E+08	-0.111E+08	-0.946E+08	-0.252E+04
0.250E+02	0.737E+01	0.155E+01	0.247E+00	0.318E-01	0.332E-02	0.250E+02	-0.319E+08	-0.397E+08	-0.842E+08	-0.521E+04
0.241E+02	0.974E+01	0.177E+01	0.277E+00	0.351E-01	0.348E-02	0.250E+02	-0.204E+08	-0.103E+09	-0.584E+08	-0.822E+04
0.170E+02	0.181E+02	0.204E+01	0.333E+00	0.403E-01	0.361E-02	0.250E+02	-0.581E+07	-0.128E+09	-0.237E+08	-0.887E+04
-0.354E+02	0.328E+02	0.210E+01	0.442E+00	0.463E-01	0.353E-02	0.250E+02	-0.270E+06	-0.344E+08	-0.341E+07	-0.582E+04
0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

TEMPERATURE VALUES

0.500E+00	0.187E+02	0.457E+01	0.346E+00	0.163E-01	0.611E-03	0.206E-04	-0.528E+06	0.807E+06	-0.952E+07	-0.323E+06
0.500E+00	0.963E+02	0.110E+02	0.500E+00	0.157E-01	0.437E-03	0.127E-04	-0.628E+06	-0.174E+07	-0.305E+08	-0.500E+00
0.500E+00	0.227E+03	0.169E+02	0.399E+00	0.772E-02	0.176E-03	0.633E-05	-0.636E+06	0.865E+05	0.370E+08	-0.500E+00
0.500E+00	0.417E+01	0.742E-01	0.494E-02	0.575E-03	0.613E-04	0.461E-05	-0.654E+06	0.497E+05	-0.191E+07	-0.500E+00
0.500E+00	0.135E+00	0.283E-01	0.455E-02	0.584E-03	0.623E-04	0.467E-05	-0.683E+06	-0.298E+05	-0.192E+07	-0.500E+00
0.500E+00	0.137E+00	0.293E-01	0.477E-02	0.612E-03	0.642E-04	0.477E-05	-0.701E+06	-0.222E+06	-0.189E+07	-0.500E+00
0.500E+00	0.143E+00	0.317E-01	0.524E-02	0.663E-03	0.667E-04	0.487E-05	-0.638E+06	-0.796E+06	-0.168E+07	-0.500E+00
0.500E+00	0.165E+00	0.378E-01	0.620E-02	0.745E-03	0.692E-04	0.485E-05	-0.409E+06	-0.207E+07	-0.116E+07	-0.500E+00
0.500E+00	0.225E+00	0.514E-01	0.790E-02	0.851E-03	0.695E-04	0.450E-05	-0.116E+06	-0.257E+07	-0.473E+06	-0.500E+00
0.500E+00	0.375E+00	0.787E-01	0.104E-01	0.939E-03	0.641E-04	0.360E-05	-0.520E+04	-0.686E+06	-0.677E+05	-0.500E+00
0.500E+00	0.751E+00	0.127E+00	0.131E-01	0.925E-03	0.503E-04	0.229E-05	-0.284E+01	-0.248E+03	-0.628E+02	-0.193E+01

A = 0.50 R = 50.0 TIME = 0.009

VELOCITY IN X DIRECTION

0.000E+00	-0.146E+09	-0.124E+08	-0.550E+06	-0.178E+05	-0.482E+03	0.257E+07	-0.785E+15	-0.369E+16	0.668E+17	0.000E+00
0.000E+00	-0.264E+09	-0.160E+08	-0.560E+06	-0.150E+05	-0.346E+03	0.257E+07	-0.695E+15	-0.124E+17	0.114E+18	0.000E+00
0.000E+00	-0.674E+09	-0.170E+08	-0.331E+06	-0.574E+04	-0.932E+02	0.256E+07	-0.598E+15	0.825E+15	-0.378E+18	0.000E+00
0.000E+00	-0.137E+09	-0.175E+07	-0.214E+05	-0.264E+03	-0.335E+01	0.253E+07	-0.710E+15	0.947E+15	0.106E+16	0.000E+00
0.000E+00	-0.398E+04	-0.156E+03	-0.645E+01	-0.309E+00	-0.193E-01	0.245E+07	-0.908E+15	0.126E+16	0.985E+15	0.000E+00
0.000E+00	-0.770E+01	-0.187E+01	-0.457E+00	-0.823E-01	-0.111E-01	0.227E+07	-0.113E+16	0.156E+16	0.948E+15	0.000E+00
0.000E+00	-0.143E+01	-0.162E+01	-0.541E+00	-0.970E-01	-0.125E-01	0.193E+07	-0.106E+16	0.141E+16	0.789E+15	0.000E+00
0.000E+00	0.218E+02	-0.136E+01	-0.748E+00	-0.122E+00	-0.145E-01	0.138E+07	-0.465E+15	0.102E+16	0.469E+15	0.000E+00
0.000E+00	0.109E+03	-0.450E+01	-0.118E+01	-0.160E+00	-0.167E-01	0.710E+06	-0.320E+14	0.129E+16	0.137E+15	0.000E+00
0.000E+00	0.249E+03	-0.185E+02	-0.176E+01	-0.205E+00	-0.185E-01	0.176E+06	0.600E+11	0.231E+15	0.803E+13	0.000E+00
0.000E+00	0.118E+03	0.136E+02	0.249E+01	0.219E+00	0.147E-01	0.793E+03	-0.122E+06	-0.266E+08	-0.264E+07	0.000E+00

VELOCITY IN Y DIRECTION

0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
-0.110E+05	0.662E+08	0.402E+07	0.140E+06	0.375E+04	0.865E+02	-0.554E+06	0.173E+15	0.310E+16	-0.286E+17	0.536E+09
-0.812E+05	0.168E+09	0.425E+07	0.828E+05	0.143E+04	0.233E+02	-0.552E+06	0.149E+15	-0.206E+15	0.946E+15	-0.859E+10
-0.254E+05	0.343E+08	0.438E+06	0.538E+04	0.667E+02	0.857E+00	-0.544E+06	0.177E+15	-0.236E+15	-0.264E+15	0.167E+09
0.239E+02	0.174E+04	0.694E+02	0.293E+01	0.144E+00	0.906E-02	-0.527E+06	0.227E+15	-0.316E+15	-0.246E+15	0.167E+08
0.243E+02	0.783E+01	0.167E+01	0.303E+00	0.447E-01	0.537E-02	-0.487E+06	0.282E+15	-0.391E+15	-0.237E+15	0.167E+08
0.239E+02	0.623E+01	0.164E+01	0.330E+00	0.493E-01	0.581E-02	-0.410E+06	0.265E+15	-0.354E+15	-0.197E+15	0.000E+00
0.246E+02	0.649E+00	0.166E+01	0.395E+00	0.576E-01	0.643E-02	-0.289E+06	0.116E+15	-0.256E+15	-0.117E+15	0.000E+00
0.389E+02	-0.181E+02	0.262E+01	0.530E+00	0.703E-01	0.716E-02	-0.144E+06	0.801E+13	-0.324E+15	-0.344E+14	-0.136E+08
0.173E+03	-0.386E+02	0.617E+01	0.730E+00	0.867E-01	0.769E-02	-0.342E+05	-0.150E+11	-0.578E+14	-0.201E+13	-0.465E+07
0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

TEMPERATURE VALUES

0.500E+00	0.388E+06	0.437E+05	0.241E+04	0.936E+02	0.293E+01	-0.110E+05	0.354E+13	0.133E+13	-0.274E+15	-0.879E+13
0.500E+00	0.132E+07	0.804E+05	0.280E+04	0.751E+02	0.173E+01	-0.110E+05	0.347E+13	0.620E+14	-0.572E+15	-0.500E+00
0.500E+00	0.336E+07	0.850E+05	0.165E+04	0.286E+02	0.465E+00	-0.110E+05	0.299E+13	-0.412E+13	0.189E+16	-0.500E+00
0.500E+00	0.681E+06	0.867E+04	0.105E+03	0.128E+01	0.157E-01	-0.109E+05	0.355E+13	-0.473E+13	-0.529E+13	-0.500E+00
0.500E+00	0.146E+00	0.336E-01	0.606E-02	0.873E-03	0.104E-03	-0.105E+05	0.454E+13	-0.631E+13	-0.492E+13	-0.500E+00
0.500E+00	0.147E+00	0.348E-01	0.646E-02	0.940E-03	0.110E-03	-0.974E+04	0.564E+13	-0.783E+13	-0.474E+13	-0.500E+00
0.500E+00	0.148E+00	0.378E-01	0.734E-02	0.106E-02	0.121E-03	-0.821E+04	0.531E+13	-0.709E+13	-0.394E+13	-0.500E+00
0.500E+00	0.144E+00	0.455E-01	0.919E-02	0.127E-02	0.134E-03	-0.579E+04	0.232E+13	-0.513E+13	-0.234E+13	-0.500E+00
0.500E+00	0.123E+00	0.658E-01	0.127E-01	0.158E-02	0.146E-03	-0.289E+04	0.160E+12	-0.649E+13	-0.688E+12	-0.500E+00
0.500E+00	0.146E+00	0.116E+00	0.184E-01	0.191E-02	0.149E-03	-0.684E+03	-0.299E+09	-0.115E+13	-0.401E+11	-0.500E+00
0.500E+00	0.643E+00	0.215E+00	0.257E-01	0.212E-02	0.134E-03	0.712E-05	-0.103E+04	-0.114E+06	-0.106E+05	-0.225E+03

A = 0.50 R = 50.0 TIME = 0.010

VELOCITY IN X DIRECTION

0.000E+00	0.283E+16	0.254E+15	0.114E+14	0.376E+12	0.102E+11	0.990E+16	0.366E+29	-0.166E+31	0.226E+32	0.000E+00
0.000E+00	0.520E+16	0.333E+15	0.117E+14	0.319E+12	0.744E+10	0.101E+17	0.292E+29	-0.299E+31	0.161E+32	0.000E+00
0.000E+00	0.132E+17	0.357E+15	0.714E+13	0.126E+12	0.210E+10	0.101E+17	0.273E+29	-0.331E+30	-0.246E+33	0.000E+00
0.000E+00	0.421E+16	0.520E+14	0.633E+12	0.769E+10	0.935E+08	0.100E+17	0.416E+29	0.499E+29	-0.724E+29	0.000E+00
0.000E+00	-0.119E+08	-0.148E+06	-0.168E+04	-0.165E+02	-0.975E+03	0.929E+16	0.684E+29	0.838E+29	0.999E+28	0.000E+00
0.000E+00	0.119E+02	-0.130E+01	-0.590E+00	-0.112E+00	-0.975E+03	0.724E+16	0.967E+29	0.119E+30	0.966E+28	0.000E+00
0.000E+00	0.168E+01	-0.116E+01	-0.639E+00	-0.133E+00	-0.975E+03	0.391E+16	0.773E+29	0.103E+30	0.637E+28	0.000E+00
0.000E+00	-0.378E+02	-0.222E+01	-0.760E+00	-0.175E+00	-0.976E+03	0.103E+16	0.148E+29	0.300E+29	0.227E+28	0.000E+00
0.000E+00	-0.148E+03	0.434E+01	-0.114E+01	-0.258E+00	-0.977E+03	0.671E+14	0.742E+26	0.777E+28	0.486E+27	0.000E+00
0.000E+00	-0.191E+03	0.251E+02	-0.259E+01	-0.382E+00	-0.984E+03	0.189E+12	-0.929E+21	0.978E+27	0.189E+26	0.000E+00
0.000E+00	0.138E+03	0.401E+02	0.411E+01	0.441E+00	0.345E-01	-0.446E+05	-0.201E+10	-0.182E+14	-0.540E+12	0.000E+00

VELOCITY IN Y DIRECTION

0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0.282E+05	-0.130E+16	-0.832E+14	-0.294E+13	-0.799E+11	-0.186E+10	-0.252E+16	-0.732E+28	0.749E+30	-0.404E+31	0.000E+00
0.691E+06	-0.331E+16	-0.893E+14	-0.178E+13	-0.317E+11	-0.525E+09	-0.254E+16	-0.684E+28	0.827E+29	0.616E+32	0.000E+00
0.227E+07	-0.106E+16	-0.130E+14	-0.158E+12	-0.192E+10	-0.233E+08	-0.251E+16	-0.104E+29	-0.124E+29	0.181E+29	0.000E+00
0.886E+04	0.294E+07	0.362E+05	0.400E+03	0.343E+01	0.250E+02	-0.232E+16	-0.171E+29	-0.209E+29	-0.250E+28	0.000E+00
0.286E+02	0.345E+01	0.172E+01	0.397E+00	0.638E-01	0.250E+02	-0.181E+16	-0.241E+29	-0.298E+29	-0.241E+28	0.000E+00
0.289E+02	0.544E+01	0.159E+01	0.416E+00	0.711E-01	0.250E+02	-0.979E+15	-0.193E+29	-0.257E+29	-0.159E+28	0.000E+00
0.246E+02	0.145E+02	0.178E+01	0.470E+00	0.859E-01	0.250E+02	-0.259E+15	-0.370E+28	-0.750E+28	-0.569E+27	0.000E+00
-0.217E+02	0.320E+02	0.190E+00	0.631E+00	0.114E+00	0.250E+02	-0.167E+14	-0.185E+26	-0.194E+28	-0.121E+27	0.000E+00
-0.425E+03	0.215E+01	-0.359E+01	0.112E+01	0.157E+00	0.250E+02	-0.473E+11	0.232E+21	-0.244E+27	-0.472E+25	0.000E+00
0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

TEMPERATURE VALUES

0.500E+00	-0.759E+13	-0.893E+12	-0.500E+11	-0.195E+10	-0.618E+08	-0.470E+14	-0.220E+27	0.160E+28	-0.125E+30	-0.278E+28
0.500E+00	-0.260E+14	-0.166E+13	-0.588E+11	-0.159E+10	-0.372E+08	-0.505E+14	-0.146E+27	0.149E+29	-0.809E+29	-0.500E+00
0.500E+00	-0.663E+14	-0.178E+13	-0.357E+11	-0.634E+09	-0.105E+08	-0.508E+14	-0.136E+27	0.165E+28	0.123E+31	-0.500E+00
0.500E+00	-0.210E+14	-0.260E+12	-0.316E+10	-0.384E+08	-0.467E+06	-0.502E+14	-0.208E+27	-0.249E+27	0.362E+27	-0.500E+00
0.500E+00	0.610E+05	0.774E+03	0.939E+01	0.114E+00	0.153E-02	-0.464E+14	-0.342E+27	-0.419E+27	-0.500E+26	-0.500E+00
0.500E+00	0.147E+00	0.386E-01	0.818E-02	0.136E-02	0.181E-03	-0.362E+14	-0.483E+27	-0.597E+27	-0.483E+26	-0.500E+00
0.500E+00	0.126E+00	0.386E-01	0.935E-02	0.160E-02	0.207E-03	-0.195E+14	-0.386E+27	-0.515E+27	-0.318E+26	-0.500E+00
0.500E+00	0.337E-01	0.394E-01	0.120E-01	0.204E-02	0.245E-03	-0.518E+13	-0.741E+26	-0.150E+27	-0.113E+26	-0.500E+00
0.500E+00	-0.327E+00	0.505E-01	0.178E-01	0.273E-02	0.290E-03	-0.335E+12	-0.371E+24	-0.388E+26	-0.243E+25	-0.500E+00
0.500E+00	-0.104E+01	0.109E+00	0.289E-01	0.363E-02	0.325E-03	-0.946E+09	0.464E+19	-0.489E+25	-0.944E+23	-0.500E+00
0.500E+00	0.112E+01	0.272E+00	0.458E-01	0.448E-02	0.328E-03	-0.551E+02	-0.117E+08	-0.450E+11	-0.260E+10	-0.471E+08

A = 0.25 R = 400.0 TIME = 0.001

VELOCITY IN X DIRECTION

0.000E+00	-0.778E+01	-0.189E-01	-0.459E-04	-0.111E-06	-0.270E-09	-0.649E-12	-0.153E-14	-0.357E-17	-0.810E-20	0.000E+00
0.000E+00	-0.778E+01	-0.189E-01	-0.459E-04	-0.111E-06	-0.269E-09	-0.643E-12	-0.151E-14	-0.346E-17	-0.770E-20	0.000E+00
0.000E+00	-0.778E+01	-0.189E-01	-0.459E-04	-0.111E-06	-0.265E-09	-0.622E-12	-0.142E-14	-0.313E-17	-0.664E-20	0.000E+00
0.000E+00	-0.777E+01	-0.189E-01	-0.457E-04	-0.109E-06	-0.257E-09	-0.584E-12	-0.127E-14	-0.266E-17	-0.529E-20	0.000E+00
0.000E+00	-0.777E+01	-0.188E-01	-0.452E-04	-0.106E-06	-0.240E-09	-0.518E-12	-0.106E-14	-0.205E-17	-0.377E-20	0.000E+00
0.000E+00	-0.777E+01	-0.187E-01	-0.440E-04	-0.992E-07	-0.210E-09	-0.420E-12	-0.786E-15	-0.138E-17	-0.230E-20	0.000E+00
0.000E+00	-0.775E+01	-0.183E-01	-0.411E-04	-0.857E-07	-0.165E-09	-0.295E-12	-0.491E-15	-0.768E-18	-0.113E-20	0.000E+00
0.000E+00	-0.765E+01	-0.171E-01	-0.349E-04	-0.641E-07	-0.107E-09	-0.165E-12	-0.237E-15	-0.322E-18	-0.417E-21	0.000E+00
0.000E+00	-0.728E+01	-0.143E-01	-0.242E-04	-0.365E-07	-0.502E-10	-0.641E-13	-0.774E-16	-0.891E-19	-0.988E-22	0.000E+00
0.000E+00	-0.599E+01	-0.869E-02	-0.108E-04	-0.122E-07	-0.130E-10	-0.132E-13	-0.129E-16	-0.122E-19	-0.113E-22	0.000E+00
0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

VELOCITY IN Y DIRECTION

0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0.200E+03	0.486E+00	0.118E-02	0.287E-05	0.696E-08	0.168E-10	0.402E-13	0.944E-16	0.216E-18	0.481E-21	0.000E+00
0.200E+03	0.486E+00	0.118E-02	0.286E-05	0.693E-08	0.165E-10	0.389E-13	0.888E-16	0.195E-18	0.415E-21	0.000E+00
0.200E+03	0.486E+00	0.118E-02	0.285E-05	0.684E-08	0.160E-10	0.365E-13	0.797E-16	0.166E-18	0.330E-21	0.000E+00
0.200E+03	0.486E+00	0.117E-02	0.283E-05	0.664E-08	0.150E-10	0.324E-13	0.663E-16	0.128E-18	0.235E-21	0.000E+00
0.200E+03	0.485E+00	0.117E-02	0.275E-05	0.620E-08	0.131E-10	0.262E-13	0.491E-16	0.864E-19	0.143E-21	0.000E+00
0.200E+03	0.484E+00	0.114E-02	0.257E-05	0.536E-08	0.103E-10	0.184E-13	0.306E-16	0.480E-19	0.711E-22	0.000E+00
0.200E+03	0.478E+00	0.107E-02	0.218E-05	0.400E-08	0.669E-11	0.103E-13	0.148E-16	0.201E-19	0.261E-22	0.000E+00
0.200E+03	0.455E+00	0.894E-03	0.151E-05	0.228E-08	0.313E-11	0.401E-14	0.483E-17	0.557E-20	0.617E-23	0.000E+00
0.200E+03	0.374E+00	0.543E-03	0.677E-06	0.768E-09	0.815E-12	0.825E-15	0.806E-18	0.765E-21	0.711E-24	0.000E+00
0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

TEMPERATURE VALUES

0.500E+00	0.121E-02	0.295E-05	0.718E-08	0.174E-10	0.423E-13	0.102E-15	0.243E-18	0.573E-21	0.131E-23	0.315E-01
0.500E+00	0.121E-02	0.295E-05	0.718E-08	0.174E-10	0.420E-13	0.100E-15	0.236E-18	0.541E-21	0.120E-23	-0.500E+00
0.500E+00	0.121E-02	0.295E-05	0.717E-08	0.173E-10	0.414E-13	0.973E-16	0.222E-18	0.489E-21	0.103E-23	-0.500E+00
0.500E+00	0.121E-02	0.295E-05	0.714E-08	0.171E-10	0.401E-13	0.912E-16	0.199E-18	0.415E-21	0.827E-24	-0.500E+00
0.500E+00	0.121E-02	0.294E-05	0.707E-08	0.166E-10	0.375E-13	0.810E-16	0.165E-18	0.321E-21	0.589E-24	-0.500E+00
0.500E+00	0.121E-02	0.292E-05	0.688E-08	0.155E-10	0.329E-13	0.657E-16	0.122E-18	0.216E-21	0.359E-24	-0.500E+00
0.500E+00	0.121E-02	0.286E-05	0.642E-08	0.134E-10	0.258E-13	0.460E-16	0.767E-19	0.120E-21	0.177E-24	-0.500E+00
0.500E+00	0.119E-02	0.268E-05	0.545E-08	0.100E-10	0.167E-13	0.257E-16	0.371E-19	0.504E-22	0.652E-25	-0.500E+00
0.500E+00	0.113E-02	0.223E-05	0.379E-08	0.571E-11	0.784E-14	0.100E-16	0.120E-19	0.139E-22	0.154E-25	-0.500E+00
0.500E+00	0.936E-03	0.135E-05	0.169E-08	0.192E-11	0.203E-14	0.206E-17	0.201E-20	0.191E-23	0.177E-26	-0.500E+00
0.500E+00	0.379E-03	0.288E-06	0.219E-09	0.166E-12	0.126E-15	0.961E-19	0.730E-22	0.554E-25	0.421E-28	0.318E-01

A = 0.25 R = 400.0 TIME = 0.002

VELOCITY IN X DIRECTION

0.000E+00	-0.193E+02	-0.812E-01	-0.280E-03	-0.882E-06	-0.262E-08	-0.746E-11	-0.204E-13	-0.540E-16	-0.623E+04	0.000E+00
0.000E+00	-0.115E+02	-0.623E-01	-0.234E-03	-0.771E-06	-0.235E-08	-0.684E-11	-0.190E-13	-0.506E-16	-0.623E+04	0.000E+00
0.000E+00	-0.115E+02	-0.623E-01	-0.234E-03	-0.770E-06	-0.234E-08	-0.671E-11	-0.182E-13	-0.470E-16	-0.623E+04	0.000E+00
0.000E+00	-0.115E+02	-0.623E-01	-0.234E-03	-0.768E-06	-0.230E-08	-0.646E-11	-0.169E-13	-0.416E-16	-0.623E+04	0.000E+00
0.000E+00	-0.115E+02	-0.624E-01	-0.234E-03	-0.761E-06	-0.223E-08	-0.601E-11	-0.149E-13	-0.343E-16	-0.623E+04	0.000E+00
0.000E+00	-0.116E+02	-0.628E-01	-0.235E-03	-0.746E-06	-0.209E-08	-0.527E-11	-0.120E-13	-0.254E-16	-0.623E+04	0.000E+00
0.000E+00	-0.117E+02	-0.640E-01	-0.235E-03	-0.710E-06	-0.183E-08	-0.419E-11	-0.860E-14	-0.161E-16	-0.623E+04	0.000E+00
0.000E+00	-0.123E+02	-0.672E-01	-0.233E-03	-0.632E-06	-0.143E-08	-0.284E-11	-0.505E-14	-0.826E-17	-0.623E+04	0.000E+00
0.000E+00	-0.145E+02	-0.739E-01	-0.218E-03	-0.487E-06	-0.906E-09	-0.148E-11	-0.220E-14	-0.304E-17	-0.624E+04	0.000E+00
0.000E+00	-0.221E+02	-0.796E-01	-0.167E-03	-0.273E-06	-0.385E-09	-0.492E-12	-0.587E-15	-0.662E-18	-0.628E+04	0.000E+00
0.000E+00	0.457E+01	0.510E-02	0.511E-05	0.482E-08	0.438E-11	0.387E-14	0.335E-17	0.286E-20	0.241E-23	0.000E+00

VELOCITY IN Y DIRECTION

0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0.200E+03	0.118E+01	0.501E-02	0.173E-04	0.548E-07	0.163E-09	0.466E-12	0.128E-14	0.337E-17	0.199E+03	0.976E-03
0.200E+03	0.118E+01	0.501E-02	0.173E-04	0.547E-07	0.162E-09	0.457E-12	0.122E-14	0.313E-17	0.199E+03	0.122E-02
0.200E+03	0.118E+01	0.502E-02	0.173E-04	0.545E-07	0.159E-09	0.440E-12	0.114E-14	0.277E-17	0.199E+03	0.488E-03
0.200E+03	0.118E+01	0.502E-02	0.173E-04	0.540E-07	0.154E-09	0.409E-12	0.100E-14	0.228E-17	0.199E+03	-0.488E-02
0.200E+03	0.118E+01	0.504E-02	0.173E-04	0.528E-07	0.144E-09	0.358E-12	0.811E-15	0.169E-17	0.199E+03	-0.349E-01
0.200E+03	0.119E+01	0.510E-02	0.173E-04	0.499E-07	0.126E-09	0.283E-12	0.576E-15	0.107E-17	0.199E+03	-0.194E+00
0.200E+03	0.123E+01	0.527E-02	0.169E-04	0.441E-07	0.979E-10	0.191E-12	0.337E-15	0.548E-18	0.199E+03	-0.100E+01
0.200E+03	0.136E+01	0.558E-02	0.154E-04	0.335E-07	0.613E-10	0.993E-13	0.146E-15	0.201E-18	0.199E+03	-0.519E+01
0.200E+03	0.179E+01	0.570E-02	0.115E-04	0.185E-07	0.258E-10	0.328E-13	0.388E-16	0.437E-19	0.199E+03	-0.267E+02
0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

TEMPERATURE VALUES

0.500E+00	0.296E-02	0.125E-04	0.434E-07	0.137E-09	0.408E-12	0.116E-14	0.323E-17	0.862E-20	-0.455E-03	-0.244E+00
0.500E+00	0.296E-02	0.125E-04	0.434E-07	0.136E-09	0.406E-12	0.115E-14	0.312E-17	0.815E-20	-0.121E-02	-0.500E+00
0.500E+00	0.296E-02	0.125E-04	0.434E-07	0.136E-09	0.400E-12	0.111E-14	0.294E-17	0.739E-20	-0.121E-02	-0.500E+00
0.500E+00	0.296E-02	0.125E-04	0.432E-07	0.134E-09	0.387E-12	0.104E-14	0.264E-17	0.630E-20	-0.121E-02	-0.500E+00
0.500E+00	0.296E-02	0.125E-04	0.427E-07	0.130E-09	0.362E-12	0.931E-15	0.221E-17	0.492E-20	-0.121E-02	-0.500E+00
0.500E+00	0.296E-02	0.124E-04	0.415E-07	0.121E-09	0.319E-12	0.761E-15	0.167E-17	0.339E-20	-0.121E-02	-0.500E+00
0.500E+00	0.295E-02	0.121E-04	0.388E-07	0.105E-09	0.253E-12	0.546E-15	0.107E-17	0.195E-20	-0.120E-02	-0.500E+00
0.500E+00	0.291E-02	0.113E-04	0.332E-07	0.806E-10	0.169E-12	0.319E-15	0.550E-18	0.879E-21	-0.115E-02	-0.500E+00
0.500E+00	0.279E-02	0.965E-05	0.239E-07	0.486E-10	0.857E-13	0.136E-15	0.199E-18	0.273E-21	-0.995E-03	-0.500E+00
0.500E+00	0.240E-02	0.633E-05	0.119E-07	0.188E-10	0.264E-13	0.340E-16	0.410E-19	0.472E-22	-0.493E-03	-0.500E+00
0.500E+00	0.132E-02	0.194E-05	0.235E-08	0.259E-11	0.267E-14	0.264E-17	0.253E-20	0.236E-23	0.379E-03	-0.204E+00

A = 0.25 R = 400.0 TIME = 0.003

VELOCITY IN X DIRECTION

0.000E+00	-0.327E+02	-0.213E+00	-0.990E-03	-0.390E-05	-0.139E-07	-0.465E-10	-0.146E-12	-0.436E-15	0.344E+06	0.000E+00
0.000E+00	-0.139E+03	-0.435E+00	-0.144E-02	-0.479E-05	-0.155E-07	-0.487E-10	-0.146E-12	-0.424E-15	0.345E+06	0.000E+00
0.000E+00	-0.148E+02	-0.133E+00	-0.708E-03	-0.301E-05	-0.112E-07	-0.386E-10	-0.123E-12	-0.366E-15	0.345E+06	0.000E+00
0.000E+00	-0.148E+02	-0.132E+00	-0.705E-03	-0.299E-05	-0.111E-07	-0.375E-10	-0.116E-12	-0.335E-15	0.345E+06	0.000E+00
0.000E+00	-0.147E+02	-0.131E+00	-0.697E-03	-0.294E-05	-0.108E-07	-0.357E-10	-0.106E-12	-0.290E-15	0.345E+06	0.000E+00
0.000E+00	-0.144E+02	-0.128E+00	-0.680E-03	-0.287E-05	-0.104E-07	-0.329E-10	-0.928E-13	-0.234E-15	0.344E+06	0.000E+00
0.000E+00	-0.133E+02	-0.119E+00	-0.651E-03	-0.278E-05	-0.977E-08	-0.289E-10	-0.745E-13	-0.170E-15	0.343E+06	0.000E+00
0.000E+00	-0.887E+01	-0.983E-01	-0.626E-03	-0.271E-05	-0.886E-08	-0.234E-10	-0.530E-13	-0.106E-15	0.337E+06	0.000E+00
0.000E+00	0.672E+01	-0.711E-01	-0.667E-03	-0.268E-05	-0.744E-08	-0.164E-10	-0.309E-13	-0.521E-16	0.310E+06	0.000E+00
0.000E+00	0.499E+02	-0.100E+00	-0.849E-03	-0.248E-05	-0.511E-08	-0.865E-11	-0.129E-13	-0.175E-16	0.218E+06	0.000E+00
0.000E+00	0.355E+02	0.841E-01	0.133E-03	0.174E-06	0.206E-09	0.225E-12	0.235E-15	0.236E-18	0.635E+04	0.000E+00

VELOCITY IN Y DIRECTION

0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0.200E+03	0.983E+01	0.320E-01	0.106E-03	0.351E-06	0.112E-08	0.348E-11	0.103E-13	0.297E-16	-0.200E+05	0.241E+04
0.200E+03	0.205E+01	0.130E-01	0.608E-04	0.240E-06	0.860E-09	0.285E-11	0.888E-14	0.260E-16	-0.200E+05	0.000E+00
0.200E+03	0.205E+01	0.130E-01	0.606E-04	0.239E-06	0.849E-09	0.277E-11	0.842E-14	0.237E-16	-0.200E+05	-0.390E-02
0.200E+03	0.205E+01	0.130E-01	0.601E-04	0.236E-06	0.828E-09	0.264E-11	0.770E-14	0.206E-16	-0.200E+05	-0.175E+00
0.200E+03	0.203E+01	0.128E-01	0.590E-04	0.230E-06	0.794E-09	0.243E-11	0.668E-14	0.166E-16	-0.199E+05	-0.122E+01
0.200E+03	0.196E+01	0.122E-01	0.572E-04	0.223E-06	0.741E-09	0.212E-11	0.533E-14	0.120E-16	-0.199E+05	-0.817E+01
0.200E+03	0.170E+01	0.110E-01	0.555E-04	0.215E-06	0.663E-09	0.169E-11	0.375E-14	0.740E-17	-0.195E+05	-0.531E+02
0.201E+03	0.783E+00	0.960E-02	0.574E-04	0.206E-06	0.542E-09	0.116E-11	0.216E-14	0.360E-17	-0.178E+05	-0.330E+03
0.207E+03	-0.169E+01	0.117E-01	0.665E-04	0.181E-06	0.361E-09	0.601E-12	0.887E-15	0.119E-17	-0.122E+05	-0.199E+04
0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

TEMPERATURE VALUES

0.500E+00	0.472E-02	0.322E-04	0.151E-06	0.603E-09	0.216E-11	0.725E-14	0.229E-16	0.691E-19	-0.345E+02	-0.240E+01
0.500E+00	0.514E-02	0.327E-04	0.152E-06	0.602E-09	0.215E-11	0.715E-14	0.223E-16	0.657E-19	-0.505E+02	-0.500E+00
0.500E+00	0.514E-02	0.327E-04	0.152E-06	0.599E-09	0.212E-11	0.694E-14	0.211E-16	0.601E-19	-0.505E+02	-0.500E+00
0.500E+00	0.514E-02	0.327E-04	0.151E-06	0.593E-09	0.207E-11	0.657E-14	0.192E-16	0.520E-19	-0.505E+02	-0.500E+00
0.500E+00	0.514E-02	0.326E-04	0.150E-06	0.579E-09	0.196E-11	0.596E-14	0.164E-16	0.417E-19	-0.505E+02	-0.500E+00
0.500E+00	0.513E-02	0.326E-04	0.148E-06	0.552E-09	0.177E-11	0.504E-14	0.128E-16	0.300E-19	-0.504E+02	-0.500E+00
0.500E+00	0.514E-02	0.324E-04	0.143E-06	0.503E-09	0.149E-11	0.384E-14	0.884E-17	0.185E-19	-0.502E+02	-0.500E+00
0.500E+00	0.520E-02	0.325E-04	0.133E-06	0.423E-09	0.110E-11	0.249E-14	0.503E-17	0.927E-20	-0.492E+02	-0.500E+00
0.500E+00	0.561E-02	0.331E-04	0.116E-06	0.307E-09	0.668E-12	0.126E-14	0.216E-17	0.342E-20	-0.451E+02	-0.500E+00
0.500E+00	0.759E-02	0.336E-04	0.862E-07	0.170E-09	0.286E-12	0.431E-15	0.602E-18	0.790E-21	-0.310E+02	-0.500E+00
0.500E+00	0.133E-01	0.271E-04	0.402E-07	0.517E-10	0.612E-13	0.684E-16	0.734E-19	0.764E-22	0.294E-03	-0.210E+00

A = 0.25 R = 400.0 TIME = 0.004

VELOCITY IN X DIRECTION

0.000E+00	-0.240E+02	-0.401E+00	-0.259E-02	-0.127E-04	-0.542E-07	-0.209E-09	-0.750E-12	-0.126E+05	-0.421E+09	0.000E+00
0.000E+00	0.170E+04	0.332E+01	0.555E-02	0.513E-05	-0.155E-07	-0.128E-09	-0.589E-12	-0.126E+05	-0.554E+09	0.000E+00
0.000E+00	-0.166E+02	-0.231E+00	-0.167E-02	-0.901E-05	-0.408E-07	-0.164E-09	-0.605E-12	-0.126E+05	-0.549E+09	0.000E+00
0.000E+00	-0.168E+02	-0.236E+00	-0.171E-02	-0.920E-05	-0.413E-07	-0.164E-09	-0.590E-12	-0.126E+05	-0.549E+09	0.000E+00
0.000E+00	-0.177E+02	-0.250E+00	-0.180E-02	-0.956E-05	-0.421E-07	-0.162E-09	-0.563E-12	-0.126E+05	-0.547E+09	0.000E+00
0.000E+00	-0.212E+02	-0.291E+00	-0.201E-02	-0.101E-04	-0.427E-07	-0.157E-09	-0.520E-12	-0.126E+05	-0.542E+09	0.000E+00
0.000E+00	-0.351E+02	-0.403E+00	-0.238E-02	-0.108E-04	-0.425E-07	-0.148E-09	-0.457E-12	-0.126E+05	-0.523E+09	0.000E+00
0.000E+00	-0.864E+02	-0.645E+00	-0.280E-02	-0.110E-04	-0.410E-07	-0.133E-09	-0.375E-12	-0.126E+05	-0.465E+09	0.000E+00
0.000E+00	-0.254E+03	-0.966E+00	-0.278E-02	-0.105E-04	-0.384E-07	-0.113E-09	-0.276E-12	-0.126E+05	-0.317E+09	0.000E+00
0.000E+00	-0.662E+03	-0.768E+00	-0.194E-02	-0.105E-04	-0.356E-07	-0.861E-10	-0.168E-12	-0.126E+05	-0.855E+08	0.000E+00
0.000E+00	-0.516E+02	0.279E+00	0.114E-02	0.245E-05	0.405E-08	0.575E-11	0.740E-14	0.886E-17	-0.117E+06	0.000E+00

VELOCITY IN Y DIRECTION

0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0.357E+03	-0.105E+03	-0.196E+00	-0.291E-03	-0.967E-07	0.178E-08	0.107E-10	0.454E-13	0.200E+03	0.347E+08	0.344E+06
0.200E+03	0.300E+01	0.269E-01	0.162E-03	0.792E-06	0.337E-08	0.130E-10	0.464E-13	0.200E+03	0.343E+08	0.000E+00
0.200E+03	0.301E+01	0.272E-01	0.164E-03	0.803E-06	0.340E-08	0.129E-10	0.451E-13	0.200E+03	0.343E+08	-0.320E+02
0.200E+03	0.306E+01	0.280E-01	0.170E-03	0.824E-06	0.343E-08	0.127E-10	0.429E-13	0.200E+03	0.342E+08	-0.192E+03
0.199E+03	0.327E+01	0.305E-01	0.182E-03	0.857E-06	0.344E-08	0.123E-10	0.394E-13	0.200E+03	0.339E+08	-0.912E+03
0.199E+03	0.412E+01	0.372E-01	0.204E-03	0.891E-06	0.339E-08	0.114E-10	0.344E-13	0.200E+03	0.327E+08	-0.416E+04
0.197E+03	0.721E+01	0.515E-01	0.228E-03	0.899E-06	0.324E-08	0.102E-10	0.278E-13	0.200E+03	0.291E+08	-0.174E+05
0.187E+03	0.172E+02	0.701E-01	0.227E-03	0.861E-06	0.298E-08	0.849E-11	0.201E-13	0.200E+03	0.198E+08	-0.648E+05
0.136E+03	0.412E+02	0.569E-01	0.179E-03	0.848E-06	0.267E-08	0.823E-11	0.119E-13	0.200E+03	0.536E+07	-0.185E+06
0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

TEMPERATURE VALUES

0.500E+00	0.410E-02	0.589E-04	0.390E-06	0.194E-08	0.833E-11	0.323E-13	0.116E-15	-0.237E-05	0.473E+05	-0.376E+04
0.500E+00	0.310E-02	0.635E-04	0.400E-06	0.196E-08	0.834E-11	0.321E-13	0.114E-15	-0.295E-05	0.867E+05	-0.500E+00
0.500E+00	0.749E-02	0.672E-04	0.404E-06	0.196E-08	0.831E-11	0.317E-13	0.110E-15	-0.295E-05	0.859E+05	-0.500E+00
0.500E+00	0.750E-02	0.675E-04	0.406E-06	0.197E-08	0.826E-11	0.308E-13	0.103E-15	-0.294E-05	0.859E+05	-0.500E+00
0.500E+00	0.755E-02	0.683E-04	0.413E-06	0.199E-08	0.817E-11	0.293E-13	0.937E-16	-0.293E-05	0.857E+05	-0.500E+00
0.500E+00	0.773E-02	0.710E-04	0.431E-06	0.204E-08	0.799E-11	0.268E-13	0.795E-16	-0.288E-05	0.848E+05	-0.500E+00
0.500E+00	0.840E-02	0.789E-04	0.471E-06	0.210E-08	0.760E-11	0.231E-13	0.617E-16	-0.272E-05	0.819E+05	-0.500E+00
0.500E+00	0.107E-01	0.991E-04	0.546E-06	0.217E-08	0.682E-11	0.180E-13	0.418E-16	-0.232E-05	0.727E+05	-0.500E+00
0.500E+00	0.182E-01	0.143E-03	0.650E-06	0.210E-08	0.543E-11	0.119E-13	0.231E-16	-0.147E-05	0.496E+05	-0.500E+00
0.500E+00	0.383E-01	0.216E-03	0.715E-06	0.173E-08	0.343E-11	0.595E-14	0.934E-17	-0.236E-06	0.135E+05	-0.500E+00
0.500E+00	0.801E-01	0.283E-03	0.596E-06	0.985E-09	0.140E-11	0.183E-14	0.222E-17	0.288E-06	-0.330E+02	-0.123E+01

A = 0.25 R = 400.0 TIME = 0.005

VELOCITY IN X DIRECTION

0.000E+00	-0.384E+03	-0.163E+01	-0.720E-02	-0.358E-04	-0.171E-06	-0.752E-09	-0.304E-11	0.222E+09	0.221E+16	0.000E+00
0.000E+00	-0.280E+05	-0.604E+02	-0.134E+00	-0.307E-03	-0.732E-06	-0.183E-08	-0.486E-11	0.220E+09	0.320E+16	0.000E+00
0.000E+00	-0.279E+05	-0.681E+02	-0.167E+00	-0.416E-03	-0.104E-05	-0.265E-08	-0.676E-11	0.220E+09	0.364E+16	0.000E+00
0.000E+00	-0.149E+02	-0.276E+00	-0.263E-02	-0.185E-04	-0.107E-06	-0.528E-09	-0.228E-11	0.220E+09	0.363E+16	0.000E+00
0.000E+00	-0.283E+01	-0.110E+00	-0.170E-02	-0.160E-04	-0.105E-06	-0.536E-09	-0.228E-11	0.220E+09	0.359E+16	0.000E+00
0.000E+00	0.447E+02	0.365E+00	0.512E-04	-0.137E-04	-0.110E-06	-0.563E-09	-0.229E-11	0.217E+09	0.345E+16	0.000E+00
0.000E+00	0.228E+03	0.152E+01	0.232E-02	-0.153E-04	-0.128E-06	-0.604E-09	-0.225E-11	0.210E+09	0.309E+16	0.000E+00
0.000E+00	0.872E+03	0.361E+01	0.244E-02	-0.265E-04	-0.158E-06	-0.631E-09	-0.209E-11	0.190E+09	0.226E+16	0.000E+00
0.000E+00	0.278E+04	0.485E+01	-0.547E-02	-0.459E-04	-0.178E-06	-0.605E-09	-0.179E-11	0.144E+09	0.986E+15	0.000E+00
0.000E+00	0.618E+04	-0.263E+01	-0.204E-01	-0.509E-04	-0.166E-06	-0.533E-09	-0.139E-11	0.646E+08	0.957E+14	0.000E+00
0.000E+00	0.849E+03	0.266E+00	0.278E-02	0.143E-04	0.390E-07	0.781E-10	0.130E-12	0.127E+05	0.833E+07	0.000E+00

VELOCITY IN Y DIRECTION

0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
-0.211E+04	0.176E+04	0.381E+01	0.854E-02	0.199E-04	0.489E-07	0.126E-09	0.347E-12	-0.133E+08	-0.200E+15	0.805E+09
0.200E+03	0.187E+04	0.458E+01	0.113E-01	0.285E-04	0.728E-07	0.187E-09	0.487E-12	-0.133E+08	-0.227E+15	0.268E+09
0.200E+03	0.379E+01	0.430E-01	0.319E-03	0.191E-05	0.992E-08	0.454E-10	0.186E-12	-0.133E+08	-0.227E+15	0.268E+09
0.200E+03	0.305E+01	0.330E-01	0.265E-03	0.177E-05	0.982E-08	0.458E-10	0.185E-12	-0.132E+08	-0.224E+15	0.268E+09
0.200E+03	0.160E+00	0.456E-02	0.163E-03	0.165E-05	0.101E-07	0.472E-10	0.182E-12	-0.131E+08	-0.216E+15	0.268E+09
0.204E+03	-0.109E+02	-0.641E-01	0.369E-04	0.179E-05	0.113E-07	0.492E-10	0.176E-12	-0.127E+08	-0.193E+15	0.268E+09
0.221E+03	-0.498E+02	-0.185E+00	0.533E-04	0.251E-05	0.131E-07	0.498E-10	0.161E-12	-0.114E+08	-0.141E+15	0.268E+09
0.302E+03	-0.164E+03	-0.245E+00	0.565E-03	0.371E-05	0.141E-07	0.469E-10	0.135E-12	-0.864E+07	-0.616E+14	0.000E+00
0.700E+03	-0.360E+03	0.235E+00	0.147E-02	0.398E-05	0.131E-07	0.405E-10	0.103E-12	-0.383E+07	-0.598E+13	-0.469E+09
0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

TEMPERATURE VALUES

0.500E+00	0.357E-01	0.224E-03	0.111E-05	0.557E-08	0.264E-10	0.116E-12	0.472E-15	-0.301E+05	-0.254E+12	-0.146E+11
0.500E+00	0.946E-01	0.248E-03	0.103E-05	0.533E-08	0.259E-10	0.115E-12	0.466E-15	-0.333E+05	-0.500E+12	-0.500E+00
0.500E+00	0.994E-02	0.117E-03	0.881E-06	0.515E-08	0.256E-10	0.113E-12	0.456E-15	-0.333E+05	-0.569E+12	-0.500E+00
0.500E+00	0.977E-02	0.114E-03	0.858E-06	0.506E-08	0.255E-10	0.112E-12	0.443E-15	-0.333E+05	-0.567E+12	-0.500E+00
0.500E+00	0.905E-02	0.104E-03	0.807E-06	0.496E-08	0.254E-10	0.111E-12	0.424E-15	-0.332E+05	-0.561E+12	-0.500E+00
0.500E+00	0.618E-02	0.789E-04	0.714E-06	0.492E-08	0.260E-10	0.110E-12	0.396E-15	-0.328E+05	-0.540E+12	-0.500E+00
0.500E+00	-0.456E-02	0.954E-05	0.599E-06	0.523E-08	0.276E-10	0.109E-12	0.354E-15	-0.317E+05	-0.483E+12	-0.500E+00
0.500E+00	-0.413E-01	-0.115E-03	0.620E-06	0.635E-08	0.302E-10	0.104E-12	0.292E-15	-0.287E+05	-0.353E+12	-0.500E+00
0.500E+00	-0.145E+00	-0.227E-03	0.115E-05	0.847E-08	0.318E-10	0.896E-13	0.210E-15	-0.216E+05	-0.154E+12	-0.500E+00
0.500E+00	-0.308E+00	-0.424E-05	0.246E-05	0.104E-07	0.289E-10	0.636E-13	0.120E-15	-0.959E+04	-0.149E+11	-0.500E+00
0.500E+00	-0.358E-01	0.775E-03	0.378E-05	0.995E-08	0.195E-10	0.323E-13	0.477E-16	0.653E-06	-0.455E+04	-0.456E+03

A = 0.25 R = 400.0 TIME = 0.006

VELOCITY IN X DIRECTION

0.000E+00	0.106E+06	0.462E+03	0.110E+01	0.194E-02	0.283E-05	0.357E-08	-0.190E+05	-0.477E+19	-0.323E+29	0.000E+00
0.000E+00	0.618E+06	0.150E+04	0.305E+01	0.581E-02	0.109E-04	0.204E-07	-0.190E+05	-0.511E+19	-0.530E+29	0.000E+00
0.000E+00	0.189E+07	0.342E+04	0.723E+01	0.162E-01	0.365E-04	0.795E-07	-0.190E+05	-0.509E+19	-0.742E+29	0.000E+00
0.000E+00	0.209E+03	0.590E+01	0.654E-01	0.427E-03	0.194E-05	0.671E-08	-0.190E+05	-0.504E+19	-0.730E+29	0.000E+00
0.000E+00	0.949E+03	0.204E+02	0.176E+00	0.926E-03	0.348E-05	0.100E-07	-0.190E+05	-0.491E+19	-0.700E+29	0.000E+00
0.000E+00	0.408E+04	0.629E+02	0.410E+00	0.169E-02	0.513E-05	0.120E-07	-0.190E+05	-0.454E+19	-0.625E+29	0.000E+00
0.000E+00	0.165E+05	0.171E+03	0.810E+00	0.254E-02	0.599E-05	0.109E-07	-0.190E+05	-0.371E+19	-0.466E+29	0.000E+00
0.000E+00	0.617E+05	0.390E+03	0.127E+01	0.288E-02	0.496E-05	0.617E-08	-0.190E+05	-0.227E+19	-0.231E+29	0.000E+00
0.000E+00	0.194E+06	0.670E+03	0.138E+01	0.205E-02	0.214E-05	0.480E-09	-0.190E+05	-0.702E+18	-0.452E+28	0.000E+00
0.000E+00	0.402E+06	0.659E+03	0.709E+00	0.388E-03	-0.398E-06	-0.243E-08	-0.190E+05	-0.348E+17	-0.743E+26	0.000E+00
0.000E+00	-0.523E+04	0.132E+02	0.244E-01	0.547E-04	0.200E-06	0.594E-09	0.136E-11	-0.242E+08	-0.349E+13	0.000E+00

VELOCITY IN Y DIRECTION

0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0.376E+05	-0.386E+05	-0.938E+02	-0.191E+00	-0.362E-03	-0.678E-06	-0.123E-08	0.200E+03	0.319E+18	0.331E+28	0.000E+00
0.380E+05	-0.121E+06	-0.222E+03	-0.470E+00	-0.105E-02	-0.236E-05	-0.511E-08	0.200E+03	0.318E+18	0.464E+28	0.000E+00
0.199E+03	-0.933E+01	-0.325E+00	-0.376E-02	-0.248E-04	-0.112E-06	-0.376E-09	0.200E+03	0.315E+18	0.456E+28	0.000E+00
0.197E+03	-0.558E+02	-0.124E+01	-0.107E-01	-0.561E-04	-0.208E-06	-0.586E-09	0.200E+03	0.306E+18	0.438E+28	0.000E+00
0.188E+03	-0.253E+03	-0.391E+01	-0.254E-01	-0.104E-03	-0.311E-06	-0.711E-09	0.200E+03	0.284E+18	0.390E+28	0.000E+00
0.145E+03	-0.103E+04	-0.107E+02	-0.505E-01	-0.157E-03	-0.364E-06	-0.636E-09	0.200E+03	0.232E+18	0.291E+28	0.000E+00
-0.561E+02	-0.387E+04	-0.245E+02	-0.795E-01	-0.178E-03	-0.298E-06	-0.338E-09	0.200E+03	0.141E+18	0.144E+28	0.000E+00
-0.988E+03	-0.122E+05	-0.421E+02	-0.864E-01	-0.125E-03	-0.120E-06	0.168E-10	0.200E+03	0.438E+17	0.283E+27	0.000E+00
-0.523E+04	-0.254E+05	-0.413E+02	-0.433E-01	-0.203E-04	0.381E-07	0.194E-09	0.200E+03	0.217E+16	0.464E+25	0.000E+00
0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

TEMPERATURE VALUES

0.500E+00	-0.931E+01	-0.535E-01	-0.161E-03	-0.344E-06	-0.582E-09	-0.805E-12	-0.674E-08	0.641E+15	0.303E+25	-0.254E+24
0.500E+00	-0.277E+02	-0.380E-01	-0.161E-03	-0.229E-06	-0.298E-09	-0.406E-12	-0.717E-08	0.799E+15	0.829E+25	-0.500E+00
0.500E+00	-0.980E+02	-0.747E-01	-0.591E-04	-0.645E-07	-0.149E-09	-0.478E-12	-0.715E-08	0.795E+15	0.116E+26	-0.500E+00
0.500E+00	-0.266E-01	-0.900E-03	-0.100E-04	-0.643E-07	-0.284E-09	-0.941E-12	-0.709E-08	0.788E+15	0.114E+26	-0.500E+00
0.500E+00	-0.158E+00	-0.336E-02	-0.282E-04	-0.143E-06	-0.522E-09	-0.145E-11	-0.693E-08	0.767E+15	0.109E+26	-0.500E+00
0.500E+00	-0.710E+00	-0.105E-01	-0.661E-04	-0.263E-06	-0.770E-09	-0.174E-11	-0.651E-08	0.710E+15	0.976E+25	-0.500E+00
0.500E+00	-0.289E+01	-0.284E-01	-0.129E-03	-0.389E-06	-0.882E-09	-0.153E-11	-0.561E-08	0.581E+15	0.729E+25	-0.500E+00
0.500E+00	-0.107E+02	-0.641E-01	-0.197E-03	-0.428E-06	-0.707E-09	-0.825E-12	-0.396E-08	0.354E+15	0.382E+25	-0.500E+00
0.500E+00	-0.335E+02	-0.105E+00	-0.202E-03	-0.289E-06	-0.285E-09	-0.112E-13	-0.170E-08	0.109E+15	0.707E+24	-0.500E+00
0.500E+00	-0.678E+02	-0.394E-01	-0.902E-04	-0.543E-07	0.709E-10	0.386E-12	0.980E-10	0.544E+13	0.116E+23	-0.500E+00
0.500E+00	0.163E+01	0.279E-02	0.113E-04	0.505E-07	0.151E-09	0.345E-12	0.219E-09	-0.710E+04	-0.604E+08	-0.363E+09

A = 0.25 R = 400.0 TIME = 0.007

VELOCITY IN X DIRECTION

0.000E+00	-0.305E+10	-0.129E+08	-0.306E+05	-0.552E+02	-0.824E-01	-0.976E-04	0.364E+12	-0.800E+42	0.218E+56	0.000E+00
0.000E+00	-0.533E+10	-0.153E+08	-0.284E+05	-0.419E+02	-0.505E-01	-0.373E-04	0.363E+12	-0.968E+42	0.391E+56	0.000E+00
0.000E+00	-0.840E+10	-0.113E+08	-0.123E+05	-0.103E+02	0.804E-03	0.448E-04	0.362E+12	-0.986E+42	0.709E+56	0.000E+00
0.000E+00	-0.324E+07	0.654E+05	0.820E+03	0.540E+01	0.251E-01	0.918E-04	0.360E+12	-0.844E+42	0.703E+56	0.000E+00
0.000E+00	0.129E+08	0.261E+06	0.217E+04	0.111E+02	0.423E-01	0.128E-03	0.355E+12	-0.841E+42	0.628E+56	0.000E+00
0.000E+00	0.544E+08	0.784E+06	0.489E+04	0.196E+02	0.600E-01	0.150E-03	0.341E+12	-0.636E+42	0.479E+56	0.000E+00
0.000E+00	0.218E+09	0.208E+07	0.938E+04	0.286E+02	0.685E-01	0.138E-03	0.309E+12	-0.338E+42	0.260E+56	0.000E+00
0.000E+00	0.800E+09	0.464E+07	0.141E+05	0.314E+02	0.572E-01	0.913E-04	0.245E+12	-0.857E+41	0.691E+55	0.000E+00
0.000E+00	0.246E+10	0.751E+07	0.143E+05	0.220E+02	0.294E-01	0.358E-04	0.146E+12	-0.423E+40	0.394E+54	0.000E+00
0.000E+00	0.474E+10	0.615E+07	0.661E+04	0.649E+01	0.605E-02	0.544E-05	0.442E+11	-0.229E+37	0.450E+51	0.000E+00
0.000E+00	-0.375E+06	-0.423E+03	-0.165E+00	0.303E-03	0.106E-05	0.323E-08	0.191E+05	0.812E+15	0.430E+24	0.000E+00

VELOCITY IN Y DIRECTION

0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
-0.599E+06	0.333E+09	0.961E+06	0.177E+04	0.262E+01	0.315E-02	0.233E-05	-0.221E+11	0.605E+41	-0.244E+55	0.000E+00
-0.170E+07	0.525E+09	0.712E+06	0.769E+03	0.648E+00	-0.482E-04	-0.279E-05	-0.221E+11	0.616E+41	-0.443E+55	0.000E+00
0.209E+03	0.230E+06	-0.402E+04	-0.511E+02	-0.337E+00	-0.157E-02	-0.573E-05	-0.220E+11	0.590E+41	-0.439E+55	0.000E+00
0.232E+03	-0.808E+06	-0.163E+05	-0.135E+03	-0.698E+00	-0.264E-02	-0.805E-05	-0.217E+11	0.525E+41	-0.393E+55	0.000E+00
0.358E+03	-0.340E+07	-0.490E+05	-0.305E+03	-0.123E+01	-0.375E-02	-0.941E-05	-0.208E+11	0.397E+41	-0.299E+55	0.000E+00
0.982E+03	-0.136E+08	-0.130E+06	-0.586E+03	-0.178E+01	-0.428E-02	-0.866E-05	-0.188E+11	0.211E+41	-0.162E+55	0.000E+00
0.383E+04	-0.500E+08	-0.290E+06	-0.884E+03	-0.196E+01	-0.357E-02	-0.570E-05	-0.149E+11	0.536E+40	-0.432E+54	0.000E+00
0.165E+05	-0.154E+09	-0.469E+06	-0.899E+03	-0.137E+01	-0.183E-02	-0.224E-05	-0.888E+10	0.264E+39	-0.246E+53	0.000E+00
0.670E+05	-0.296E+09	-0.384E+06	-0.413E+03	-0.406E+00	-0.378E-03	-0.339E-06	-0.266E+10	0.143E+36	-0.281E+50	0.000E+00
0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

TEMPERATURE VALUES

0.500E+00	0.256E+06	0.150E+04	0.450E+01	0.976E-02	0.172E-04	0.254E-07	-0.539E+08	0.988E+38	-0.202E+52	-0.118E+51
0.500E+00	0.832E+06	0.240E+04	0.443E+01	0.654E-02	0.787E-05	0.579E-08	-0.554E+08	0.151E+39	-0.612E+52	-0.500E+00
0.500E+00	0.130E+07	0.176E+04	0.189E+01	0.154E-02	-0.286E-06	-0.734E-08	-0.553E+08	0.154E+39	-0.110E+53	-0.500E+00
0.500E+00	-0.464E+03	-0.125E+02	-0.134E+00	-0.859E-03	-0.396E-05	-0.144E-07	-0.551E+08	0.147E+39	-0.109E+53	-0.500E+00
0.500E+00	-0.202E+04	-0.409E+02	-0.339E+00	-0.174E-02	-0.661E-05	-0.201E-07	-0.542E+08	0.131E+39	-0.982E+52	-0.500E+00
0.500E+00	-0.851E+04	-0.122E+03	-0.764E+00	-0.307E-02	-0.938E-05	-0.235E-07	-0.521E+08	0.994E+38	-0.749E+52	-0.500E+00
0.500E+00	-0.340E+05	-0.326E+03	-0.146E+01	-0.447E-02	-0.107E-04	-0.216E-07	-0.471E+08	0.528E+38	-0.406E+52	-0.500E+00
0.500E+00	-0.125E+06	-0.725E+03	-0.221E+01	-0.490E-02	-0.894E-05	-0.142E-07	-0.373E+08	0.134E+38	-0.108E+52	-0.500E+00
0.500E+00	-0.386E+06	-0.117E+04	-0.224E+01	-0.343E-02	-0.459E-05	-0.560E-08	-0.222E+08	0.661E+36	-0.616E+50	-0.500E+00
0.500E+00	-0.742E+06	-0.962E+03	-0.103E+01	-0.101E-02	-0.943E-06	-0.847E-09	-0.667E+07	0.359E+33	-0.704E+47	-0.500E+00
0.500E+00	-0.500E+02	-0.516E-01	0.297E-06	0.153E-06	0.705E-09	0.227E-11	0.993E-09	-0.279E+12	-0.308E+20	-0.481E+21

REFERENCES

- Batchelor, G. K. An Introduction to Fluid Dynamics. Cambridge: Cambridge University Press, 1967.
- Chapman, Alan J. Fundamentals of Heat Transfer. New York: Macmillan Publishing Company, 1987.
- Kays, W. M., and M. E. Crawford. Convective Heat and Mass Transfer. New York: McGraw Hill, 1980.
- Wang, Herbert F., and M. P. Anderson. Introduction to Ground-water Modeling. San Francisco: W. H. Freeman and Company, 1982.