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ULTIMATE STRENGTH PREDICTION IN FIBERGLASS/EPOXY BEAMS SUBJECTED TO THREE-POINT BENDING USING ACOUSTIC EMISSION AND NEURAL NETWORKS

by

Michele D. Dorfman

A Thesis Submitted to the Graduate Studies Office in Partial Fulfillment of the Requirements for the Degree of Master of Science in Aerospace Engineering

> Embry-Riddle Aeronautical University Daytona Beach, Florida Spring 2004

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Michele D. Dorfman

This thesis was prepared under the direction of the candidate's thesis committee chairmen, Dr. Eric v. K. Hill and Dr. Yi Zhao, Department of Aerospace Engineering, and has been approved by the members of her thesis committee. It was submitted to the School of Graduate Studies and Research and was accepted in partial fulfillment of the requirements for the degree of Master of Science in Aerospace engineering.

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ABSTRACT

Author:	Michele D. Dorfman				
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The research presented herein demonstrates the feasibility of predicting ultimate strengths in composite beams subjected to 3-point bending using a neural network analysis of acoustic emission (AE) amplitude distribution data. Fifteen unidirectional fiberglass/epoxy beams were loaded to failure in a 3-point bend test fixture in an MTS load frame. Acoustic emission data were recorded from the onset of loading until failure. After acquisition, the acoustic emission data were filtered to include only data acquired up to 80 percent of the average ultimate load.

A backpropagation neural network was constructed to predict the ultimate failure load using these AE amplitude distribution data. Architecturally, the network consisted of a 61 processing element input layer for each of the event frequencies, a 13 processing element hidden layer for mapping, and a single processing element output layer for predicting the ultimate load. The network, trained on seven beams, was able to predict ultimate loads in the remaining eight beams with a worst case error of +4.34 percent, which was within the desired goal of ± 5 percent.

A second analysis was performed using a Kohonen self organizing map and multivariate statistical analysis. A Kohonen self organizing map was utilized to classify the AE data into 4 failure mechanisms. Then multivariate statistical analysis was performed using the number of hits associated with each failure mechanism to develop a prediction equation. The prediction equation was able to predict the ultimate failure load with a worst case error of -11.34 percent, which was well outside the desired goal of ± 5 percent. This was thought to be the result of noisy or sparse data, since statistical predictions are inherently sensitive to both, whereas backpropagation neural networks are not.

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CHAPTER 1

INTRODUCTION

1.1 OVERVIEW

In today's aircraft industry, the materials available to designers have always had a strong impact on how aircraft are designed and built. The basic fundamentals of flight, such as the ratios of lift to drag, and thrust to weight have, unsurprisingly, dictated the choice of materials used. The materials chosen have been generally based on their strength to weight criteria.

Composite materials have made the primary impact in the aircraft industry market today. The greatest advantage of these materials is their high strength-to-weight ratios. Composites can produce weight savings of up to 25% over their metallic counterparts [1]. Due to the increased use of composite materials, research in quality control of these structures must be a continuing process.

Proof loading is the application of a load, frequently in excess of the maximum service load, to a component or structure in order to assure safety [2]. The theory behind proof loading is the assumption that if the structure does not fail during the proof test, it will not fail in service.

The research herein involves proof loading composite beams in 3-point bending to 80 percent of their average ultimate strength. Acoustic emission nondestructive testing combined with a neural network analysis were then used to predict the ultimate strengths in fiberglass/epoxy beams.

1.2 PREVIOUS RESEARCH

Previous research has shown that AE data combined with the use of neural networks can be used to create a prediction model for ultimate loads in various applications. Hill, Walker and Rowell [3] tested a set of eighteen ASTM standard 145 mm (5.75 in.) diameter filament wound graphite/epoxy pressure vessels. Acoustic emission amplitude distribution data taken during hydroproof up to 25 percent of the expected burst pressure were used as inputs for a backpropagation neural network. The network, trained on nine bottles, was able to predict burst pressures in the remaining eight bottles with a worst case error of -3.89 percent.

Fisher and Hill [4] tested a set of eleven ASTM standard 145 mm (5.75 in.) diameter filament wound fiberglass/epoxy pressure vessels. Two of these bottles contained simulated manufacturing defects which lowered their burst pressures significantly. Again, acoustic emission amplitude distribution data taken during hydroproof up to 25 percent of the expected burst pressure were used as inputs for a backpropagation neural network. The network, trained on seven bottles (one containing a defect), was able to predict burst pressures in the remaining four bottles (one containing a defect) with a worst case error of +14.7 percent. When the defective bottles were removed from consideration, the worst case prediction error dropped to -2.1 percent. It was concluded that more defective bottles would need to be tested in order to increase the prediction accuracy.

Fatzinger and Hill [5] tested a set of ten fiberglass/epoxy I-beams loaded in cantilever fashion with a hydraulic ram. Two of these beams were manufactured using a different resin type. Acoustic emission amplitude distribution data taken during loading up to 50 percent of the theoretical ultimate load were used as inputs for a backpropagation neural network. The network, trained on five beams (one from the different resin type), was able to predict ultimate loads in the remaining beams with a worst case error of -10.6 percent. A Kohonen self organizing map was utilized to classify the AE data into failure mechanisms. Then a multivariate statistical analysis was performed using the percentage of AE hits associated with each failure mechanism along with the epoxy type to develop a prediction equation for ultimate load. The multivariate statistical analysis resulted in a prediction equation that had a worst case error of +36.0 percent. The large error for the statistical analysis was probably due to sparse data.

1.3 CURRENT APPROACH

The current approach is similar to those previously mentioned; however, the beams were loaded in 3-point bending. Fifteen unidirectional fiberglass/epoxy beams were loaded to failure in an MTS load frame using a 3-point bend test fixture. Acoustic emission amplitude distribution data taken during loading up to 80 percent of the average ultimate load were used as inputs for a backpropagation neural network. The network was trained

on seven beams, and tested on the remaining eight. Then a second analysis was performed using a Kohonen self organizing map and multivariate statistical analysis. The Kohonen self organizing map was utilized to classify the AE data into failure mechanisms. Then multivariate statistical analysis was performed using the number of hits associated with each failure mechanism to develop a prediction equation.

CHAPTER 2

BACKGROUND THEORY

2.1 MATERIAL SYSTEM

The material system used in this research was Saint-Gobain Vetrotex America, Inc. RO99-625 unidirectional glass roving and West System 105 epoxy resin with a West System 206 slow hardener.

According to the manufacturer, RO99-625 is a high-performance, multi-resin-compatible reinforcement used for filament winding fuel and chemical storage tanks, large diameter pipe, water treatment vessels, pressure vessels, reverse osmosis tubes and electrical fuse tubes. It has been specifically designed to achieve optimum results in polyester, vinylester, phenolic and epoxy resin systems.

According to West System, 105 epoxy resin is a clear, pale yellow, low-viscosity liquid epoxy resin. When cured, the resin is clear. It can be cured in a wide variety of temperature ranges to form a high-strength solid with excellent moisture resistance. It is designed to wet out and bond with wood fiber, fiberglass, reinforcing fabrics and a variety of metals. The 206 slow hardener is a low-viscosity epoxy curing agent for use when extended working and cure time is needed or to provide adequate working time at higher temperatures. When combined with 105 resin in a five-part resin to one-part

hardener ratio, the cured resin/hardener mixture yields a rigid, high-strength, moistureresistant solid with excellent bonding and coating properties.

2.3 ACOUSTIC EMISSION

Acoustic emission (AE) can be defined as the transient elastic waves generated by the rapid release of energy from sources within a stressed material. The most common sources of this energy release in a composite structure are matrix cracking, delaminations and fiber breaks [6]. External sources such as mechanical noises can also be detected. In most cases, the structure is undergoing tension, compression, bending, or pressurization to generate the stresses needed to cause acoustic emissions. The transient elastic stress waves travel outward from the growth source. Acoustic emission transducers are used to convert the mechanical stress waves into usable electrical voltage signals. An AE data acquisition system can be utilized to convert the electrical voltage signals to AE quantification parameters. These AE parameters can be represented graphically and used in analyses. A typical AE system is shown in Figure 2.1, and a detailed view of the AE transducer is given in Figure 2.2.



Figure 2.1 Complete acoustic emission system



Figure 2.2 Acoustic emission transducer

An AE system works in the following way. A mechanical stress wave is generated by the rapid release of energy due to the flaw growth caused by an applied stress. Most AE transducers, which use a piezoelectric element for transduction, convert the mechanical stress wave into an electrical voltage signal. The electrical voltage signal is then passed through a preamplifier and a frequency filter. The preamplifier typically provides a gain of 100 (40 dB) and includes a high-pass or bandpass filter. The most common bandpass is 100-300 kHz, encompassing the 150 kHz resonant frequency of the most commonly used sensor [7]. It filters out the signals below 100 kHz and above 300 kHz. This eliminates low frequency background noise and high frequency noise caused by electromagnetic interference, but also limits the range of AE signals that can be detected. The amplified and filtered voltage signal is then fed into the data acquisition system, where it is amplified again and stored for future analysis. The data acquisition system extracts information about the voltage signal and generates AE quantification parameters. These AE parameters are displayed on the computer screen in the form of correlation plots or numerical tables.

2.3.1 Event Parameters

A typical AE signal or hit can be represented as a complex, damped, sinusoidal voltage versus time trace. A typical AE signal and its AE quantifying parameters can be seen in Figure 2.3. The five most commonly employed AE parameters are amplitude, duration, counts, rise time, and energy.



Figure 2.3 Acoustic emission waveform and parameters

These parameters are defined as follows. The amplitude is the largest voltage peak in the signal waveform. Amplitude is measured in decibels [dB]. The duration is the length of the hit, from the first crossing of the threshold to the last crossing of the threshold. Duration is measured in microseconds [μ s]. Counts is defined as the number of times the signal crosses the threshold. Counts is also known as ringdown counts or threshold crossing counts. Rise time is the time from the start of the hit to its peak amplitude. Rise time is measured in microseconds [μ s]. Energy, also known as MARSE, is the measured area under the rectified waveform. Energy is measured in energy counts.

Threshold is another essential parameter in acoustic emissions signal analysis. The threshold is an adjustable amplitude setting that determines when the data acquisition system starts recording hits. The sensitivity of the system is determined by the threshold setting. Unwanted background noises can be eliminated by setting the threshold above the amplitude of the unwanted noise, but also below the amplitude of the AE data needed.

2.3.2 Failure Mechanisms

The three primary failure mechanisms in composite materials are matrix cracking, delaminations, and fiber breaks. These failure mechanisms have been characterized by Hill [8] using the magnitude of the amplitude, duration, counts, rise time, and energy associated with each AE hit in fiberglass/epoxy pressure vessels.

The first primary failure mechanism is matrix cracking. There are two types of matrix cracking, transverse and longitudinal. Transverse matrix cracking is perpendicular to the fiber orientation, and longitudinal matrix cracking is parallel to the fiber orientation. Transverse matrix cracking hits in fiberglass/epoxy pressure vessels exhibit low amplitude, energy, and counts with short durations [8]. Longitudinal matrix cracking (fiber/matrix debonding) hits exhibit medium amplitude and energy with high counts and long durations. Matrix cracking occurs throughout the loading of the test specimen and is usually the least damaging of the three failure mechanisms.

The second primary failure mechanism is delaminations. Delaminations occur mostly in specimens subjected to bending. When delaminations occur in fiberglass bottles, they release very high amplitude, high energy signals with long durations and a high number of counts [8].

The third primary failure mechanism is fiber breaks. Fiber break signals in fiberglass pressure vessels exhibit high amplitudes and high energies with short to medium durations and low to medium counts [8]. Fiber breaks usually occur at the end of the

loading cycle and are the most damaging of the three failure mechanisms. The following table illustrates the relative magnitudes of the AE parameters associated with each of the three primary failure mechanisms in fiberglass/epoxy pressure vessels.

 Table 2.1
 AE parameters and associated failure mechanisms in fiberglass/epoxy pressure vessels [8]

AE Parameter	Transverse Matrix Cracking	Longitudinal Matrix Cracking	Delaminations	Fiber Breaks
Amplitude	Low	Medium	High	Low-Medium
Energy Low Medium		High	Very High	
Counts	Low	High	High	Medium-High
Duration	Short	Long	Long	Short- Medium

2.3.3 Amplitude Distribution

As stated previously, the amplitude is the largest voltage peak in the signal waveform. Acoustic emission signal sources can range from 1 microvolt to 10 volts; therefore, it is convenient to represent the amplitude on a logarithmic scale. Amplitude is customarily expressed in decibels relative to 1 microvolt at the transducing element. Amplifier gain is then given by

$$\Delta dB = 20 \log \frac{V_{out}}{V_{in}} \text{ [dB]},$$

where V_{out} = output voltage [dB] and V_{in} = input voltage [dB]. The detectable range of AE amplitudes is on the scale of 0-100 decibels, and typical threshold settings for composite materials are 45-60 decibels.

Acoustic emission amplitude data can be graphed into a hits vs. amplitude histogram. Figure 2.4 shows a typical [differential] amplitude distribution plot for the fiberglass/epoxy beams used in this research. Previous research by Kouvarakos and Hill [6] has shown that the AE failure mechanisms are represented by the humps that make up the amplitude distribution. These humps have a tendency to overlap each other making it difficult to differentiate between the failure mechanisms on the amplitude histogram.



Figure 2.4 Amplitude distribution histogram

Neural networks can be useful in analyzing acoustic emission data. The amplitude distribution data can be input into a backpropagation neural network for prediction. The neural network can associate the hit frequencies with an ultimate load. Moreover, Kohonen self organizing maps can be used to classify the failure mechanisms into amplitude ranges.

2.4 NEURAL NETWORKS

An artificial neural network is a mathematical modeling and information processing tool with performance characteristics similar to those of a biological neural network. An artificial neural network, like a biological neural network, consists of a network of massively parallel, interconnected processing elements (PE) or neurons. A typical PE is shown in Figure 2.5.



Figure 2.5 Processing element (neuron)

Each PE receives a number of input signals that may or may not generate an output signal based upon the given inputs. Each input has a relative weight associated with it such that the effective input to the PE is a summation of the inputs multiplied by their associated weights. This value is then modified by a transfer or activation function (Figure 2.6) and passed directly to the output path of the processing element. These outputs can either be excitatory or inhibitory. An excitatory output will cause the PE to fire; an inhibitory output will keep the PE from firing. This output signal can then be interconnected to the input paths of other processing elements.



Figure 2.6 Transfer functions [9]

Processing elements are typically organized into groups called layers. In general, a network will consist of an input layer, one or more hidden layers, and an output layer. Data are presented to the network in the input layer, processing is accomplished in the hidden layers, and the response of the network is presented in the output layer. The architecture for a generic neural network is shown in Figure 2.7.



Figure 2.7 Generic neural network architecture

2.4.1 Backpropagation Neural Networks

A backpropagation neural network is a multilayered, supervised, feed forward network, as shown in Figure 2.8.



Figure 2.8 Backpropagation neural network

This type of network learns the relationship between the given input and the target output vector by minimizing the difference between the target and actual output vectors. The learning process consists of two stages. In the first stage, the input vectors are fed through the network to generate a response vector. In the second stage, the output error is computed for each input response based upon the target output values. The overall network error is then reduced by back propagating error adjustments to the network weights.

The algorithm for a simple backpropagation neural network is given by Walker and Hill [9]:

STAGE 1: Forward propagation of input vector

Step 1: Initialize weights to small random values

Step 2: Do while stopping condition is false

Step 3: Compute input sum and apply activation function for each middle PE:

$$\mathbf{y}_{j} = \mathbf{f}(\mathbf{w}_{ij} * \mathbf{x}_{i})$$

Step 4: Compute input sum and apply activation function for each output PE:

$$z_k = f(v_{ij} * y_i)$$

STAGE 2: Back propagation of error

Step 5: Compute error: $\delta_k = (t_k - z_k) * f'(w_{1k} * y_1)$

Step 6: Compute delta weights: $\Delta v_{jk} = (\alpha)(\delta_k)(y_j) + \{Momentum * \Delta v_{ij}(old)\}$

Step 7: Compute error contribution for each middle layer PE:

 $\delta_{j} = \delta_{k} * W_{jk} * f'(W_{ij} * X_{i})$

Step 8: Compute delta weights: $\Delta w_{ij} = (\alpha)(\delta_j)(x_i) + \{Momentum * \Delta w_{ij}(old)\}$

Step 9: Update weights: $Q_{rs}(new) = Q_{rs}(old) + \Delta Q_{rs}$

Step 10: Test stopping condition

Stopping conditions for a backpropagation neural network are when the weight changes have reached some minimal value or when the average error across a series of input vectors is below some desired level.

EXAMPLE

Consider a backpropagation network with 2 inputs and 2 hidden or middle layer PEs and a single output [9]. Find the new weights when the network is presented with an input vector $X_i = [0.0, 1.0]$ and target vector $Z_1 = 1.0$ using a learning coefficient of 0.25 and a sigmoid activation function.



First compute the middle layer output using the relationship: $y_j = w_{ij} x_i$

$$y_{1} = w_{11} x_{1} + w_{21} x_{2} + w_{1B} = (0.7)(0) + (-0.2)(1.0) + 0.4 = 0.2$$

$$y_{2} = w_{12} x_{1} + w_{22} x_{2} + w_{2B} = (-0.4)(0) + (0.3)(1.0) + 0.6 = 0.9$$

$$y_{1(OUT)} = f(y_{1}) = 1 / (1 + e^{-y_{1}}) = 0.55$$

$$y_{2(OUT)} = f(y_{2}) = 1 / (1 + e^{-y_{2}}) = 0.71$$

Next, compute the network output and associated error using the relationship: $z_k = v_{ij} y_i$

$$z_{1} = v_{11} y_{1} + v_{12} y_{2} + v_{1B} = (0.5)(0.55) + (0.1)(0.71) - 0.3 = 0.046$$

$$z_{1(OUT)} = f(z_{1}) = 1 / (1 + e^{-z_{1}}) = 0.51$$

$$\delta_{k} = (T_{k} - z_{k(OUT)}) f'(z_{k(OUT)})$$

$$\delta_{z1} = (T_{1} - z_{1(OUT)}) f(z_{1})(1 - f(z_{1})) = (1.0 - 0.51)(0.51)(1 - 0.51) = 0.12$$

The middle to output layer weights can now be updates using: $\Delta v_{jk} = \alpha \, \delta_k \, y_{j(OUT)}$

$$\Delta \mathbf{v}_{11} = \alpha \, \delta_{z1} \, \mathbf{y}_{1(\text{OUT})} = (0.25)(0.12)(0.55) = 0.017$$
$$\Delta \mathbf{v}_{12} = \alpha \, \delta_{z1} \, \mathbf{y}_{2(\text{OUT})} = (0.25)(0.12)(0.71) = 0.021$$
$$\Delta \mathbf{v}_{1B} = \alpha \, \delta_{z1} \, \text{Bias} = (0.25)(0.12)(1) = 0.030$$
$$\mathbf{v}_{k} = | \, 0.517 \ 0.121 \ | \ -0.270 \ |$$

The second stage begins by computing the middle layer error as: $\delta_j = \delta_k v_{kj} f'(y_{j(OUT)})$

$$\delta_{y1} = \delta_{z1} v_{11} f(y_1)(1 - f(y_1)) = (0.12)(0.5)(0.55)(1 - 0.55) = 0.015$$

$$\delta_{y2} = \delta_{z1} v_{12} f(y_2)(1 - f(y_2)) = (0.12)(0.1)(0.71)(1 - 0.71) = 0.0025$$

The input to middle layer weights are then updated using: $\Delta w_{ij} = \alpha \delta_i x_j$

$$\Delta w_{11} = \alpha \ \delta_{y1} \ x_1 = (0.25)(0.015)(0) = 0$$

$$\Delta w_{12} = \alpha \ \delta_{y1} \ x_2 = (0.25)(0.015)(1.0) = 0.0038$$

$$\Delta w_{21} = \alpha \ \delta_{y2} \ x_1 = (0.25)(0.0025)(0) = 0$$

$$\Delta w_{22} = \alpha \ \delta_{y2} \ x_2 = (0.25)(0.0025)(1.0) = 0.0006$$

$$\Delta w_{1B} = \alpha \ \delta_{y1} \ Bias = (0.25)(0.015)(1.0) = 0.0038$$

$$\Delta w_{2B} = \alpha \ \delta_{y2} \ Bias = (0.25)(0.0025)(1.0) = 0.0006$$

Finally, the new updated weights are given as:

$$\mathbf{w}_{ij(NEW)} = \left| \begin{array}{ccc} 0.7 & -0.3962 \\ -0.2 & 0.3006 \end{array} \right| \left| \begin{array}{c} 0.4038 \\ 0.6006 \end{array} \right|$$

This procedure can be repeated until the weight changes are no longer significant, at which point the network is considered to be trained.

2.4.2 Kohonen Self Organizing Maps

A Kohonen self organizing map (SOM) is a single layered, unsupervised, competitive neural network, as shown below.



Figure 2.9 Kohonen self organizing map

A SOM is a neural network that sorts data into different categories, or creates a twodimensional map from multi-dimensional inputs. When trained properly, a SOM can take data that is difficult to separate accurately, and divide it into different groups or clusters with common characteristics.

A SOM has an architecture that usually consists of an input layer and a two dimensional Kohonen layer. The processing elements in the input layer are not connected to each other, although, each processing element in the input layer is connected to all the processing elements in the Kohonen layer. Furthermore, the processing elements in the Kohonen layer are connected to each other. All of these connections have an associated weight.

A SOM learns by minimizing the Euclidean distance between the weights and the input vectors. The network attempts to cluster the input vectors on a mapping layer. The network not only clusters the input vectors but also locates groups with like behaviors close to each other. The algorithm for a simple Kohonen self organizing map is given by Walker and Hill [9]:

Step 1: Initialize weights, set neighborhood and learning rate parameters

Step 2: Do while stooping condition is false

Step 3: For each input vector, x_1

Step 4: Compute for each processing element: $D_j = \sum (w_{ij} - x_i)^2$

Step 5: Find index "j" for D₁ minimum

Step 6: Update all weights in neighborhood of "j"

 $w_{ij(NEW)} = w_{ij(OLD)} + \alpha (x_i - w_{ij(OLD)})$

Step 7: Update learning rate and neighborhood parameters

Step 8: Test stopping condition

Typically, stopping conditions for a Kohonen self organizing map are when the network is said to have converged, or when the weight changes are small or after a sufficient number of training cycles are completed.

EXAMPLE

Consider a Kohonen self organizing network with 2 input processing elements and 5 cluster units [9]. Find the winning cluster unit for the input vector $x_i = [0.5, 0.2]$ and update network weights for one pass using a neighborhood factor of 1 and a learning coefficient of 0.2.



The initial weights are given as:

$\mathbf{w}_{ij} =$	0.3	0.6	0.1	0.4	0.8
	0.7	0.9	0.5	0.3	0.2

First the Euclidean distances are computed using: $D_j = \sum (w_{ij} - x_i)^2$

$$D_{1} = (w_{11} - x_{1})^{2} + (w_{21} - x_{2})^{2} = (0.3 - 0.5)^{2} + (0.7 - 0.2)^{2} = 0.29$$

$$D_{2} = (w_{12} - x_{1})^{2} + (w_{22} - x_{2})^{2} = (0.6 - 0.5)^{2} + (0.9 - 0.2)^{2} = 0.50$$

$$D_{3} = (w_{13} - x_{1})^{2} + (w_{23} - x_{2})^{2} = (0.1 - 0.5)^{2} + (0.5 - 0.2)^{2} = 0.25$$

$$D_{4} = (w_{14} - x_{1})^{2} + (w_{24} - x_{2})^{2} = (0.4 - 0.5)^{2} + (0.3 - 0.2)^{2} = 0.02$$

$$D_{5} = (w_{15} - x_{1})^{2} + (w_{25} - x_{2})^{2} = (0.8 - 0.5)^{2} + (0.2 - 0.2)^{2} = 0.09$$

Since D₄ is the closest to zero it is deemed the winning processing element. With a neighborhood factor of 1, this implies that the weights for processing element "j" = 3, 4 and 5 will be updated using: $w_{ij(NEW)} = w_{ij(OLD)} + \alpha (x_i - w_{ij(OLD)})$

$$w_{13(\text{NEW})} = w_{13(\text{OLD})} + \alpha (x_1 - w_{13(\text{OLD})}) = 0.1 + 0.2 (0.5 - 0.1) = 0.18$$
$$w_{23(\text{NEW})} = w_{23(\text{OLD})} + \alpha (x_2 - w_{23(\text{OLD})}) = 0.5 + 0.2 (0.2 - 0.5) = 0.44$$
$$w_{14(\text{NEW})} = w_{14(\text{OLD})} + \alpha (x_1 - w_{14(\text{OLD})}) = 0.4 + 0.2 (0.5 - 0.4) = 0.42$$

$$w_{24(\text{NEW})} = w_{24(\text{OLD})} + \alpha (x_2 - w_{24(\text{OLD})}) = 0.3 + 0.2 (0.2 - 0.3) = 0.28$$
$$w_{15(\text{NEW})} = w_{15(\text{OLD})} + \alpha (x_1 - w_{15(\text{OLD})}) = 0.8 + 0.2 (0.5 - 0.8) = 0.74$$
$$w_{25(\text{NEW})} = w_{25(\text{OLD})} + \alpha (x_2 - w_{25(\text{OLD})}) = 0.2 + 0.2 (0.2 - 0.2) = 0.20$$

Finally, the new weight matrix is given as:

Again, this procedure can be repeated until the weight changes no longer affect the output.

CHAPTER 3

EXPERIMENTAL PROCEDURE

3.1 FIBERGLASS/EPOXY BEAMS

All of the fiberglass/epoxy beams used for testing were fabricated at Embry-Riddle Aeronautical University. Fifteen beams, measuring 381 mm in length, 36.6 mm in width, and 4.3 mm in thickness (15" x 1.4" x 0.17"), were fabricated using a wet layup with a room temperature cure.

Ren tooling was used for the fabrication of the beams (Figure 3.1). The ren tooling was cleaned with acetone and then treated with a paste wax release agent to prevent the adhesion of the beams to the tooling. The RO99-625 direct wind roving from Saint-Gobain Vetrotex America, Inc. was bundled into groups of seven rovings. Each bundle was approximately 137 cm (54 in) long and secured at one end with tape. Ten of these bundles laid out axially made up the 35.6 mm (1.4 in) width of each specimen.

West System 105 epoxy resin and West System 206 slow hardener were thoroughly mixed in a 5 to 1 ratio. The fiber bundles were completely wetted out by the epoxy resin, then fed through a metal die with a 4 mm (5/32 in) diameter hole to remove the excess resin and to ensure a constant fiber to resin ratio. The bundles were then laid one by one axially in the ren tool until all ten bundles were inside the tool. The fibers were then

pressed flat into the tool with a squeegee and left to cure at room temperature as shown below in Figure 3.1.



Figure 3.1 Beams curing at room temperature

After the beams were completely cured, a liquid cooled saw with a diamond coated blade was used to cut the 137 cm (54 in) beams into three 381 mm (15 in) long test specimens. Approximately 102 mm (4 in) of scrap were trimmed off of each end of the 137 cm (54 in) beams.

The 381 mm (15 in) test specimens were labeled according to the large beam and location they were cut from. Three test specimens were cut from each of the 5 large beams; hence, the numbers assigned to the large beams ranged from 1 through 5, and the numbers designated to the test specimens ranged from 1 through 3.

EXAMPLE



3.2 TEST SETUP

All 3-point bend testing was also performed at Embry-Riddle Aeronautical University. The equipment used during testing included the following:

- 15 Unidirectional fiberglass/epoxy beams
- MTS Systems Corp. 3-point bend test fixture
- MTS 10 kip load frame
- MTS 407 controller
- MTS 410 digital function generator
- MTS 464 data display
- Physical Acoustics Corporation (PAC) laptop
- PAC µDiSP/NB-8 data acquisition system
- 2 PAC R15I acoustic emission transducers
 - o Channel 1 S/N: F122
 - o Channel 2 S/N: FJ61
- Omega Engineering Inc. X-Y plotter
- BNC signal cables
- Sculpey III oven-bake clay
- Stanley hot melt glue gun
- Hot melt glue sticks
- 0.5 mm mechanical pencil with HB pencil lead
The complete test setup is shown in Figure 3.2, and the MTS setup is shown in Figure 3.3.



Figure 3.2 Complete test setup



Figure 3.3 MTS setup without beam specimen

3.2.1 Specimen Setup

Physical Acoustics Corporation R15I transducers were mounted onto the test specimens 38 mm (1.5 in) from each end using the hot melt glue as a couplant, as shown in Figure 3.4. (Enough glue was used so that there was visible squeeze out on all sides of the transducers.) Transducer S/N F122 was always used as Channel 1, and transducer S/N FJ61 was always used as Channel 2. The locations of both Channel 1 and 2 remained constant throughout testing. Channel 1 was on the left and Channel 2 was on the right as the observer is facing the MTS load frame. The transducers were connected to Channels 1 and 2 of the PAC data acquisition system.



Figure 3.4 Transducers mounted on specimen

3.2.2 MTS Load Frame Setup

The 3-point bend test fixture was mounted in the hydraulic grips in the MTS machine. The span of the test fixture was set at 7 inches. Sculpey clay was applied to the 3 contact points on the test fixture to minimize any rubbing noise between the test fixture and the test specimen which could lead to unwanted AE data. An X-Y plotter was connected to the load output from the MTS 407 controller to record load as a function of time. The data acquisition system also recorded the acoustic emission data as a function of time. Hence, if load is know as a function of time and the acoustic emission data is know as a function of time, then acoustic emission activity can be determined as a function of load.

3.3 DATA ACQUISITION

Data acquisition was accomplished using a PAC 4 channel data acquisition system. This was connected to a PAC laptop computer with PAC AEwin for DiSP software installed. Pertinent setup parameters configured within the AEwin software are listed below:

•	Preamp Gain:	40 dB
•	Threshold:	40 dB
•	Peak Detection Time (PDT):	40 µs
•	Hit Definition Time (HDT):	150 µs
•	Hit Lockout Time (HLT):	300 µs

The setup parameters listed above were selected based on the recommendations of the PAC data acquisition user manual (Bibliography) for composite materials. The preamp gain is the amplification within the AE transducers. The PAC R15I transducers each have an integral preamplifier with a gain of 40 dB. The PDT is the maximum amount of time given for the system to detect the peak voltage of the AE waveform. If the PDT is set too high, the amplitude and the rise time parameters may be incorrect because the

system will mistakenly choose the wrong peak as the maximum. The HDT determines when one AE waveform ends and another begins. The HDT is the span of time spent after the AE waveform drops below the given threshold waiting to see if the waveform will rise above the threshold again. If the waveform does not rise above the threshold during the HDT, then it is considered over. If the HDT is set too high, the acquisition system will group several hits into one, causing multiple hit data. The HLT starts exactly when the HDT ends. The HLT is the time that it takes the acquisition system to move the collected data into its buffers.



Figure 3.5 Waveform with setup parameters

3.4 TEST PROCEDURE

First, the test specimen was centered in the test fixture. The MTS crosshead was then adjusted so that the fixture was in contact with the test specimen without applying a load. The X-Y plotter and the data acquisition system were then started simultaneously while the MTS was ramped at a constant rate of 8.4 mm/min (0.33 in/min). The specimens were loaded to failure. Upon failure, the X-Y plotter and the data acquisition system were stopped. A test specimen in the test fixture prior to loading can be seen in Figure 3.6, and a specimen in the test fixture after failure is shown in Figure 3.7.



Figure 3.6 Test specimen prior to loading



Figure 3.7 Test specimen after failure

A typical load vs. displacement plot is shown in Figure 3.8. (Note: The apparently compliant load-displacement data up to about 1 inch displacement may be due to clay deformation rather than beam deformation.)



Figure 3.8 Load vs. displacement plot

CHAPTER 4

ANALYSIS AND RESULTS

4.1 ACOUSTIC EMISSION DATA

Acoustic emission data were collected from the onset of loading until failure for each of the 15 beam specimens. The ultimate load for each of the test specimens and total number of AE hits acquired are shown in Table 4.1. Using Chauvenet's criterion [10], no outliers were found among the ultimate loads.

Specimen ID	Ultimate Load (lbs)	Total Hits
MDD1-1	375	2757
MDD1-2	312.5	5509
MDD1-3	327.5	7901
MDD2-1	372.5	748
MDD2-2	365	1379
MDD2-3	357.5	3214
MDD3-1	336	1051
MDD3-2	312.5	820
MDD3-3	340	611
MDD4-1	363	2540
MDD4-2	372.5	1011
MDD4-3	392.5	1682
MDD5-1	367.5	1009
MDD5-2	375	1023
MDD5-3	365	2718
AVE	355.6	
STD	24.2	7

Table 4.1 Ultimate loads and corresponding AE hits

The next step was to determine how much of the AE data would be required to make the desired ultimate load predictions. Fisher and Hill [4] were able to accurately predict burst pressures in fiberglass/epoxy filament wound composite pressure vessels using AE

data taken up to 25% of the expected burst pressure. Fatzinger and Hill [5] were able to predict the ultimate loads in fiberglass/epoxy I-beams using AE data taken up to 50% of the theoretical ultimate load. To determine how much to filter the data, the number of AE hits associated with the percentage of average ultimate load was needed (see Table 4.2). The number of hits associated with 75% of the average ultimate load was considered too sparse to use as the input to a backpropagation neural network. The network will not predict well using an amplitude distribution comprised of only 16 hits. Ninety percent and higher was not reasonable because specimens began failing at 312.5 lbs, which is less than 90% of the average ultimate load of 355.6 lbs; therefore, the neural network would be predicting on 100% of those specimens' AE data. The minimum number of hits associated with 80% and 85% were similar; however, 80% was chosen since the prediction should be made using the lowest possible proof load.

	Habit De	Percent	age of Ave	erage Ultimation	ate Load	
Specimen ID	75	80	85	90	95	100
MDD1-1	47	79	92	140	163	236
MDD1-2	148	210	326	5509	5509	5509
MDD1-3	97	109	280	805	7901	7901
MDD2-1	23	29	36	48	105	409
MDD2-2	114	154	191	244	400	619
MDD2-3	208	267	328	504	1154	1743
MDD3-1	16	32	41	101	1051	1051
MDD3-2	131	185	245	820	820	820
MDD3-3	48	64	86	127	274	611
MDD4-1	30	39	65	233	565	1099
MDD4-2	136	142	168	219	285	397
MDD4-3	60	106	138	214	316	435
MDD5-1	19	28	32	61	74	87
MDD5-2	22	29	37	52	138	273
MDD5-3	46	54	61	69	271	619

Table 4.2 AE hits associated with percentage of average ultimate load

indicates specimen failed and total AE data are included

Thus, the AE data were filtered to include only those data acquired up to 80% of the average ultimate load. A series of plots were then generated to graphically display correlations between the AE parameters. Appendix A contains the plots for all 15 test specimens. Figures 4.1, 4.2, and 4.3 show example AE plots for specimen MDD2-3.

The first step was to analyze the amplitude distribution plots. As mentioned previously, the amplitude distribution typically will exhibit humps that represent the various failure mechanisms. As seen in Figure 4.1, the failure mechanisms humps are blended together such that they cannot be readily distinguished because of the large number of hits (267).



Figure 4.1 Amplitude distribution plot

The next step was to analyze the duration vs. amplitude plots. Typically, these plots show groups or clusters of hits that represent the failure mechanisms present [7]. As shown in Figure 4.2, there are no apparent groups or clusters present in the duration vs. amplitude plots either.



Figure 4.2 Duration vs. amplitude plot

The next step was to analyze the duration vs. counts plots. Typically, these plots show a linear relationship between the duration (D) of the AE waveform and the number of counts (C) for each hit (D = kC). If the plots show unusual scatter, this is an indication that there may be multiple hit data [7]. As shown in Figure 4.3, there is a linear relationship present in the duration vs. counts plots. Thus, the setup parameters (section 3.3) are probably correct, and multiple hit data are probably minimal. This is also indicated by the coefficient of determination, R^2 , being greater than 0.90.



Figure 4.3 Duration vs. counts plot

4.2 BACKPROPAGATION NEURAL NETWORK

A series of backpropagation neural networks were optimized to predict the ultimate failure load using AE amplitude distribution data. Architecturally, each network consisted of a 61 neuron input layer for the amplitude hit frequencies, a hidden layer for mapping, and a 1 neuron output layer for predicting the ultimate load. NeuralWorks Professional II/Plus software by NeuralWare was used to create the neural networks.

Fifteen specimens were tested in all; each neural network was trained on 7 specimens and tested on the remaining 8 specimens. Because the networks were trained on the amplitude histograms from only 7 specimens, the data set was tripled to help the software learn on a larger set of data (7 x 3 = 21 data sets). The randomized training and testing sets are shown in Tables 4.3 and 4.4, respectively. Note that the training set must include the high and low values of ultimate load in order to predict correctly [3].

Specimen ID	Ultimate Load (lbs)	Amplitude Distribution Data
MDD3-1	336	396242001020001001010000 000000000000000000
MDD4-2	372.5	4 17 14 10 10 11 12 7 9 7 6 3 1 7 3 7 1 1 2 6 1 1 1 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0
MDD2-3	357.5	20 27 30 23 22 15 13 14 12 9 10 10 11 5 9 7 2 4 6 2 5 2 2 3 0 1 2 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
MDD1-2	312.5	14 18 18 9 12 9 10 14 15 11 5 14 12 5 1 4 8 1 3 2 2 2 2 4 1 0 3 3 3 1 2 0 1 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
MDD4-3	392.5	7 10 9 7 8 2 5 3 1 4 2 1 2 2 2 3 4 4 3 4 1 3 4 5 0 2 0 0 2 0 1 2 1 1 1 0 0 0 0 0 0 0 0 0
MDD5-2	375	224322121311201001010000 000000000000000000
MDD5-3	365	4 12 7 6 5 3 1 2 3 1 1 0 0 1 1 0 1 1 0 1 3 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

Table 4.3 Training set

Specimen ID	Ultimate Load (Ibs)	Amplitude Distribution Data
		691029444234312121212231
MDD1-1	375	010000000000000000000000000000000000000
		0000000000000
		14 19 24 13 16 12 9 5 4 6 5 2 4 9 3 5 4 7 4 2
MDD3-2	312.5	
		000000000000000000000000000000000000000
		5 11 15 8 9 8 5 9 7 6 1 0 3 3 3 4 4 4 3 3 3 4 5
MDD2-2	365	523423222121100010000000
		0000000000000
	327.5	9 15 8 14 10 12 9 3 5 5 3 5 2 1 1 1 2 1 1 0 1
MDD1-3		100000000000000000000000000000000000000
		0000000000000000
	340	3 14 11 6 7 7 7 1 1 0 0 1 0 2 0 0 1 0 1 0 0 1 1
MDD3-3		000000000000000000000000000000000000000
		00000000000000
		34753531201000010000010
MDD4-1	363	012000000000000000000000000000
		000000000000
		134241101320100000123000
MDD2-1	372.5	000000000000000000000000000000000000000
		0000000000000
		052121101101210112101200
MDD5-1	367.5	011000000000000000000000000000000000000
		000000000000

Table 4.4 Testing set

The first backpropagation neural network was generated using the parameters as shown in Table 4.5. Based on previous research, the normalized-cumulative-delta rule (for further explanation, see Appendix B under Learn Rule) was used as the learning rule, and the hyperbolic tangent was used as the transfer function. The epoch size was set to be twenty-one or the size of the training file repeated three times in random order. The network was trained until the RMS error converged to 3%. The remaining parameter values were the software defaults and were varied subsequently to obtain the optimum values. (For a complete list of definitions of the network parameters see Appendix B.)

Network Number	1
Inputs	61
Hidden 1	2
Output	1
L Coef	0.3
L. COEI.	0.15
Momentum	0.4
Trans. Pt.	10000
L. Coef. Ratio	0.5
F' Offset	0.1
Learn Rule	NCD
Transfer	tanH
Epoch	21
RMS Error	0.03

Table 4.5Network parameters

The first parameter that was optimized was the number of PEs in the hidden layer. The results are summarized in Figure 4.4. For the complete results from all network permutations, see Appendix C.



Figure 4.4 Optimizing number of processing elements in hidden layer plot

After the optimum number of PEs in the hidden layer was determined to be 13, that parameter and all other parameters were fixed while the F' offset was varied. The results are displayed in Figure 4.5.



Figure 4.5 Optimizing F' offset plot

The above optimization procedure was repeated for the remainder of the network parameters. These results are shown in Figures 4.6 through 4.11 and summarized in Table 4.6.



Figure 4.6 Optimizing transition point plot



Figure 4.7 Optimizing the momentum plot



Figure 4.8 Optimizing hidden layer learning coefficient plot



Figure 4.9 Optimizing output layer learning coefficient plot



Figure 4.10 Optimizing learning coefficient ratio plot



Figure 4.11 Optimizing RMS error plot

Network Number	82
Inputs	61
Hidden 1	13
Output	1
L Coef	0.3
L. COEL	0.15
Momentum	0.4
Trans. Pt.	7000
L. Coef. Ratio	0.35
F' Offset	0.05
Learn Rule	NCD
Transfer	tanH
Epoch	21
RMS Error	0.03

Table 4.6Final network parameters

Using the optimized network parameters, the resulting backpropagation neural network ultimate load predictions are summarized in Table 4.7. As can be seen (highlighted), the backpropagation neural network was able to predict the ultimate loads with a worst case error of 4.34 percent, which is within the desired goal of \pm 5 percent.

	Specimen ID	Actual Load (lbs)	Predicted Load (lbs)	% Error
1000	MDD3-1	336	333.6	-0.72
ata	MDD4-2	372.5	372.5	-0.01
Ő	MDD2-3	357.5	357.6	0.03
ng	MDD1-2	312.5	312.0	-0.16
in	MDD4-3	392.5	392.7	0.06
Tra	MDD5-2	375	378.1	0.83
	MDD5-3	365	364.9	-0.02
	MDD1-1	375	359.4	-4.15
	MDD3-2	312.5	326.0	4.34
ta	MDD2-2	365	354.2	-2.97
Da	MDD1-3	327.5	334.5	2.14
st	MDD3-3	340	325.5	-4.26
Te	MDD4-1	363	361.9	-0.31
	MDD2-1	372.5	378.8	1.69
	MDD5-1	367.5	383.1	4.25

 Table 4.7
 Backpropagation neural network results

4.3 KOHONEN SELF ORGANIZING MAP

A series of Kohonen self organizing maps (SOMs) were generated to classify the AE parameter data (energy, duration, and amplitude) into failure mechanisms. The first step was to create a large enough SOM such that each failure mechanism would be sorted into its own category. A 20 x 20 SOM was chosen because it can sort the data into 400 possible categories. Architecturally, the SOM consisted of a 3 neuron input layer for energy, duration and amplitude, a 20 x 20 Kohonen layer for processing, and a 2 neuron output layer for X-Y (2-D) output coordinates. The 20 x 20 SOM was generated using the parameters shown in Table 4.8. NeuralWorks Professional II/Plus software by NeuralWare was used to construct the neural networks. (For a complete list of definitions of the network parameters see Appendix B.)

Inputs	3
Rows	20
Columns	20
L. Coef.	0.06
SOM Steps	101730
Gamma	1
L. Coef. Ratio	0.5
Trans. Pt.	10000
Learn Rule	NCD
Tranfer	tanH
Coord. Layer	Yes
Min-Max	Yes
Neighborhood	Square
Start Width	1
End Width	1
Epoch	3391

Table 4.820 x 20 SOM network parameters

The SOM was trained using the AE data acquired from the onset of loading until failure for each of the 15 test specimens. Due to the extremely large quantity of data, the training file was filtered to contain only every 10^{th} data hit. Upon completion of training, testing files were created for each of the 15 test specimens. All 15 test files were run through the 20 x 20 SOM, and the results were compiled into one file. The output file contained an X-Y coordinate associated with every data hit. The data vectors were then sorted into failure mechanisms based on their X-Y coordinates. Subsequently, the range, mean, standard deviation and number of hits associated with each failure mechanism were determined for the three AE parameters (energy, duration, and amplitude). The results for the 20 x 20 SOM are shown in Figure 4.12 and Table 4.9.



Figure 4.12 X-Y coordinate plot

Table 4.9	20 x 20 SOI	A results for	r energy,	duration,	and a	mplitude
-----------	-------------	---------------	-----------	-----------	-------	----------

			Ene	rgy		1000	
Mechanism	X	Y	Min	Max	Mean	STD	# of Hits
1	0.8947	-0.6842	0	8	0	0	20661
2	0.7895	-0.6842	0	40	2	2	9983
3	-0.3684	0.4737	2	264	18	24	3249
4	0.5789	-0.8947	141	2475	551	449	65
5	-0.6842	-0.1579	2647	2647	2647	0	1
6	0.6842	0.0526	1055	1055	1055	0	1
7	0.2632	0.7895	167	646	340	166	13
		1.1	Durat	tion			
Mechanism	X	Y	Min	Max	Mean	STD	# of Hits
1	0.8947	-0.6842	1	1375	45	57	20661
2	0.7895	-0.6842	8	3858	186	183	9983
3	-0.3684	0.4737	115	7864	555	722	3249
4	0.5789	-0.8947	989	11996	2908	2481	65
5	-0.6842	-0.1579	26597	26597	26597	0	1
6	0.6842	0.0526	29367	29367	29367	0	1
7	0.2632	0.7895	7469	15456	10599	2991	13
			Ampli	tudo			
Machanism	V	V	Min	Max	Mean	STD	# of Hite
Mechanism	A 0.9047	0.6942	40	46	13	2	20661
1	0.8947	-0.0042	40	56	50	2	20001
2	0.7895	-0.0042	57	94	62	5	3903
3	-0.3684	0.4737	01	04	03	5	5249
4	0.5789	-0.8947	01	33	91	0	00
5	-0.6842	-0.15/9	98	98	98		
6	0.6842	0.0526	82	82	82		1
7	0.2632	0.7895	61	/9	/0	6	13

Figure 4.12 shows that the 20 x 20 SOM classified the input data into 7 failure mechanisms. From Table 4.9, it can be seen that mechanisms 1, 2 and 3 contain a large number of hits compared to mechanisms 4, 5, 6 and 7. Also, while the max and min ranges of amplitude for mechanisms 1, 2 and 3 do not overlap, the max and min ranges for mechanisms 4, 5, 6 and 7 do overlap. Therefore, it was thought that it might be possible to combine mechanisms 4, 5, 6 and 7 such that the total number of mechanisms would be either 4 or 5 instead of 7.

Thus, the next step was to generate a 5 x 1 SOM in order to force the data into 5 categories. The 5 x 1 SOM used the exact same testing and training files as the 20 x 20 SOM. The network parameters for the 5 x 1 SOM are shown in Table 4.10.

Inputs	3
Rows	5
Columns	1
L. Coef.	0.06
SOM Steps	101730
Gamma	1
L. Coef. Ratio	0.5
Trans. Pt.	10000
Learn Rule	NCD
Tranfer	tanH
Coord. Layer	Yes
Min-Max	Yes
Neighborhood	Square
Start Width	1
End Width	1
Epoch	3391

Table 4.105 x 1 SOM network parameters

The 5 x 1 SOM was trained using the same procedure as used for the 20 x 20 SOM. The results for the 5 x 1 SOM are listed in Table 4.11.

	a second a second		Ener	gy	a second and		and the second second
Mechanism	X	Y	Min	Max	Mean	STD	# of Hits
1	0	-0.5	0	8	0	0	20661
2	0	0.5	0	40	2	2	9983
3	0	1	2	353	19	27	3258
4	0	-1	514	2647	989	838	6
5	0	0	141	2475	551	449	65
			Durat	ion			
Mechanism	X	Y	Min	Max	Mean	STD	# of Hits
1	0	-0.5	1	1375	45	57	20661
2	0	0.5	8	3858	186	183	9983
3	0	1	115	11913	578	844	3258
4	0	-1	13888	29367	19052	6996	6
5	0	0	989	11996	2908	2481	65
					-		
	ARTE ALLENS		Ampli	tude			
Mechanism	X	Y	Min	Max	Mean	STD	# of Hits
1	0	-0.5	40	46	43	2	20661
2	0	0.5	47	56	50	3	9983
3	0	1	57	84	63	5	3258
4	0	-1	69	98	80	10	6
5	0	0	81	99	91	6	65

Table 4.11 5 x 1 SOM results for energy, duration, and amplitude

Notice that the 5 x 1 SOM did force the data into 5 mechanisms. Mechanisms 1, 2 and 3 still contained a large number of hits compared to mechanisms 4 and 5. The max and min ranges of amplitude for mechanisms 1, 2 and 3 do not overlap; however, the max and min ranges for mechanisms 4 and 5 do overlap. Therefore, it was decided to combine mechanisms 4 and 5. This required the generation of a 4×1 SOM to force the data into 4 categories instead of 5. Again, the 4×1 SOM used the exact same testing and training files as the 20 x 20 SOM. The network parameters for the 4×1 SOM are shown in Table 4.12.

Inputs	3
Rows	4
Columns	1
L. Coef.	0.06
SOM Steps	101730
Gamma	1
L. Coef. Ratio	0.5
Trans. Pt.	10000
Learn Rule	NCD
Tranfer	tanH
Coord. Layer	Yes
Min-Max	Yes
Neighborhood	Square
Start Width	1
End Width	1
Epoch	3391

Table 4.124 x 1 SOM network parameters

Once again, the 4 x 1 SOM was trained using the same procedure as used for the 20 x 20 SOM. The results for the 4 x 1 SOM are summarized in Table 4.13.

Table 4.13	4 x 1 SOM	results for energy,	duration,	and amplitude
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自然的。这个时候当然为			En	ergy			
Mechanism	X	Y	Min	Max	Mean	STD	# of Hits
1	0	-1	0	3	0.02	0.18	16232
2	0	-0.3	0	16	0.74	0.96	10374
3	0	0.3	0	90	4.5	4.7	5633
4	0	1	4	2647	52	153	1734
			Dur	ation			
Mechanism	X	Y	Min	Max	Mean	STD	# of Hits
1	0	-1	1	569	32	43	16232
2	0	-0.3	4	1779	119	103	10374
3	0	0.3	40	7864	295	322	5633
4	0	1	162	29367	891	1666	1734
			Amp	litude			
Mechanism	X	Y	Min	Max	Mean	STD	# of Hits
1	0	-1	40	44	42	1.3	16232
2	0	-0.3	45	50	47	1.7	10374
3	0	0.3	51	61	55	3.0	5633
4	0	1	60	99	68	6.7	1734

Here it is seen that the 4 x 1 SOM forced the data into 4 mechanisms, which agrees with the work of Graham [11]. The max and min ranges of the amplitude only slightly overlap for mechanisms 3 and 4. The sorted data for specimen MDD2-3 can be seen graphically in Figure 4.13. Here the scattered data above the trend line are multiple hits.



Figure 4.13 Sorted duration vs. amplitude plot

Amplitude distribution plots were generated to show how the $4 \ge 1$ SOM classified the failure mechanisms. Figure 4.14 shows the amplitude distribution for all the data acquired for all 15 specimens. Here the failure mechanism ranges are clearly defined with the exception of mechanisms 3 and 4 overlapping slightly.



Figure 4.14 Sorted amplitude distribution plot

Through visual inspection of the beam specimens, it was seen that transverse matrix cracking, delaminations, fiber breaks and longitudinal matrix cracking (fiber/matrix debonding) were all present. Mechanism 1 had a low amplitude range (40-44 dB), a short duration range (1-569 μ s) and a low energy range (0-3). Mechanism 2 had a low amplitude range (45-50 dB), medium short to medium durations (4-1,779 μ s), and a low energy range (0-16). Mechanism 3 had a medium amplitude range (51-61 dB), medium durations (40-7,864 μ s), and a medium energy range (0-90). Mechanism 4 has a high amplitude range (60-99 dB), a long duration (162-29,367 μ s), and a high energy range (4-2,647). In addition, from comparison of the duration vs. amplitude plots containing 100% of the data and the plots filtered to 80% (Figure 4.15), most of the data hits in mechanisms 3 and 4 are not present in the 80% plots. Multiple hits are typically most prevalent during final failure; hence, if failure is eliminated from the data, it would be expected that multiple hits would be eliminated as well.

A second 4 x 1 SOM was generated to classify the AE data taken up to 80% of the average ultimate load. The 4 x 1 SOM was trained using the same procedure as used for the 20 x 20 SOM. Upon completion of training, all 15 test files were again run through the SOM and the results compiled into one file. The output file contained an X-Y coordinate associated with every data hit. The data vectors were then distributed into failure mechanisms based on same X-Y coordinates. From this, the range, mean, standard deviation and number of hits associated with each failure mechanism were determined for each AE parameter. The results for the 4 x 1 SOM are listed in Table 4.14.

Energy							
Mechanism	X	Y	Min	Max	Mean	STD	# of Hits
1	0	-1	0	1	0	0.04	608
2	0	-0.3	0	2	0.5	0.55	465
3	0	0.3	1	8	3.5	1.76	328
4	0	1	6	78	16.9	12.3	121
			Dur	ation			
Mechanism	X	Y	Min	Max	Mean	STD	# of Hits
1	0	-1	1	125	25	27.2	608
2	0	-0.3	19	217	93	34.5	465
3	0	0.3	80	333	200	48.2	328
4	0	1	229	924	388	130.8	121
			Amp	litude			
Mechanism	X	Y	Min	Max	Mean	STD	# of Hits
1	0	-1	40	45	42	1.3	608
2	0	-0.3	43	52	47	2.0	465
3	0	0.3	49	62	55	3.2	328
4	0	1	59	79	66	4.4	121

Table 4.14 4 x 1 SOM results for 80% data

Here it is seen that the 4 x 1 SOM forced the data into 4 mechanisms, again consistent with the results obtained by Graham [11]. The max and min ranges of the amplitude slightly overlap for all mechanisms, as they should. The sorted data for specimen MDD2-3 can be seen in Figure 4.15. Comparing Figure 4.15 with Figure 4.13, it can be

seen that almost all of the multiple hit data are eliminated by taking the load to only 80% of failure, plus mechanisms 3 and 4 are greatly reduced.



Figure 4.15 Sorted duration vs. amplitude plot for 80% data

4.4 MULTIVARIATE STATISTICAL ANALYSIS

After categorizing the 80% AE data into failure mechanisms, multivariate statistical analysis was performed to determine a prediction equation based on the number of hits in each of the failure mechanism categories. Statgraphics Plus was the program used to calculate the coefficients of the prediction equation. The dependent variable was the ultimate load and the four independent variables were the number of hits per failure mechanism for each specimen. The inputs to the analysis software are given in Table 4.15.

	AND A STATE OF A STATE				
Specimen ID	Mechanism 1	Mechanism 2	Mechanism 3	Mechanism 4	Actual Load (lbs)
MDD1-1	33	24	18	4	375
MDD1-2	62	72	56	20	312.5
MDD1-3	51	41	16	1	327.5
MDD2-1	12	9	7	1	372.5
MDD2-2	45	40	31	38	365
MDD2-3	108	85	63	11	357.5
MDD3-1	24	4	4	0	336
MDD3-2	77	45	43	15	312.5
MDD3-3	40	18	5	1	340
MDD4-1	21	13	2	3	363
MDD4-2	51	57	32	2	372.5
MDD4-3	34	25	26	21	392.5
MDD5-1	9	5	11	3	367.5
MDD5-2	10	13	6	0	375
MDD5-3	31	14	8	1	365

Table 4.15Multiple linear regression inputs

The multiple linear regression (MLR) analysis produced the following prediction equation:

Predicted Load = 372.96 - 0.687 * (Mech 1) + 0.214 * (Mech 2) + 0.107 * (Mech 3) + 0.188 * (Mech 4).

Using the equation produced by the MLR analysis, the ultimate load was predicted for each specimen using the number of hits per failure mechanism as the variables. The best results were produced when predicting on failure mechanisms 1 and 2 only. Thus, the prediction equation became the following:

Predicted Load = 372.96 - 0.687 * (Mech 1) + 0.214 * (Mech 2).

The results of the prediction equation can be seen in Table 4.16. The worst case prediction error was -11.34 percent, which was outside the desired \pm 5% worst case error goal.

Specimen ID	Actual Load (Ibs)	Predicted Load (lbs)	% Error
MDD1-1	375	355.4	-5.22
MDD1-2	312.5	345.8	10.65
MDD1-3	327.5	346.7	5.86
MDD2-1	372.5	366.6	-1.57
MDD2-2	365	350.6	-3.94
MDD2-3	357.5	317.0	-11.34
MDD3-1	336	357.3	6.35
MDD3-2	312.5	329.7	5.50
MDD3-3	340	349.3	2.74
MDD4-1	363	361.3	-0.46
MDD4-2	372.5	350.1	-6.01
MDD4-3	392.5	355.0	-9.57
MDD5-1	367.5	367.8	0.09
MDD5-2	375	368.9	-1.63
MDD5-3	365	354.7	-2.83

 Table 4.16
 Multiple linear regression analysis results

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

5.1 CONCLUSIONS

- The Kohonen self organizing map appeared to successfully classify the AE data into 4 failure mechanisms. Duration, energy and amplitude data were the only AE parameters used for classification.
- The backpropagation neural network successfully predicted the ultimate loads in unidirectional fiberglass/epoxy beams subjected to 3-point bending from the acoustic emission amplitude data taken up to 80% of the average ultimate load within the desired ± 5 percent goal.
- Multivariate statistical analysis using the number of hits associated with each failure mechanism predicted ultimate failure loads, but not within the desired goal of ± 5 percent.
- The backpropagation neural network probably provided better prediction results than the multivariate statistical analysis because multivariate statistical analyses are inherently sensitive to noisy (multiple hit) or sparse data, whereas backpropagation neural networks are not.

5.2 **RECOMMENDATIONS**

- Some multiple hit data were acquired during testing mostly at or near failure. The hit lockout time (HLT) and hit definition time (HDT) might be lowered to reduce multiple hit data.
- The failure mechanisms present were assumed to be transverse matrix cracking, longitudinal matrix cracking, fiber breaks and delaminations. The failure mechanisms should be verified using microscopic failure analysis on all of the test specimens.
- The use of broadband transducers for frequency analysis may improve failure mechanism classification.
- No simulated manufacturing defects were placed in the beam specimens. Incorporating defects into future training and testing sets would be recommended.

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APPENDIX A

ACOUSTIC EMISSION DATA PLOTS


























































































APPENDIX B

NEURAL NETWORK PARAMETER DEFINITIONS

Backpropagation Neural Networks

NeuralWare defines the dialog box components and their functions as:

PEs

These text fields specify the number of processing elements (nodes) for each layer in the back-propagation network. Input corresponds to the input or bottom layer, Hid 1 through Hid 3 correspond to three hidden layers (usually you will only need one or two hidden layers), and Output corresponds to the output or top layer. The number of PEs in the input and output layers depend on the number of data fields in each data vector in your training data. The number of outputs depends on what information you want your network to provide (and requires a matching number of data fields for desired output).

LCoef

The LCoef fields correspond to Learning Rate (in the learn and recall schedule, learn section) for each of the hidden layers and the output layer. Learning coefficients are used by the learning and recall schedule, and (if the Default Schedule box in the learning and recall schedule is not checked) the Back-propagation command constructs a separate learning and recall schedule for each hidden layer and the output layer. LCoef works in conjunction with the Trans. Pt. and LCoef ratio values to configure the learning and recall schedules. The value entered in a layer's LCoef field corresponds to the first Coefficient 1 value in the learning and recall schedule (shown in the following table). The Trans. Point corresponds to the learn count value set in column 1 in the schedule. The learn count for the subsequent columns are heuristically set to 3, 7, 15 and 31 times the learn count you enter in the Trans. Point field; i.e., the intervals between transition points increase exponentially. The LCoef Ratio sets the amount to divide the LCoef value by for the first transition. This defines an exponential decay which is sampled at subsequent transition points. For example, if you set a learning coefficient of 0.5 and an LCoef Ratio of 0.5, the values for the various columns in the schedule will be:

Column 1 0.5 (the LCoef value) Column 2 0.25 (the previous column value divided by the LCoef ratio value of 2) Column 3 0.0625 (the previous column value divided by 4) Column 4 0.00391 (the previous column value divided by 16) Column 5 0.00002 (the previous column value divided by 256)

Momentum

The Momentum field value is also used in configuring the learning and recall schedules for the hidden and output layers. Basically, momentum works by adding a tendency for weights to continue to change in the direction they are already changing. For backpropagation networks, momentum is represented in the learning and recall schedules by learning Momentum. The Momentum value interacts with the Trans. Pt. and LCoef Ratio exactly as do the LCoef field values described above.

Trans. Pt.

See the explanation in the LCoef section above.

LCoef Ratio

See the explanation in the LCoef section above.

F' Offset

This is a value added to the derivative of the transfer function prior to calculating the value to back propagate from each PE. For a Sigmoid or Tanh transfer function a value of about 0.1 helps networks from getting saturated. The symptom of a saturated network is large weights and summation values. It is difficult for a saturated network to learn any further.

Learn Rule

The Learn Rule scroll window allows you to select the learning rule that is applied to all layers in the back-propagation network. The learning rule specifies how connection weights are changed during the learning process. The six learning rules available are:

- Delta-rule, which is the standard back-propagation learning rule.
- Normalized-cumulative delta-rule a rule which accumulates weight changes and updates the weights at end of epoch. It is normalized so that the learning rate is independent of the epoch size.
- Extended delta-bar-delta
- Quickprop
- Maxprop
- Delta-bar-delta

You can use the Layer/Edit tool to assign learning rules on a layer-by-layer basis. For most applications we recommend trying extended delta-bar-delta, normalized-cumulative delta-rule, or with fast learning, the delta-rule.

Transfer

The transfer function scroll window allows you to specify a transfer function that is used for all layers in the network. The transfer function is a non-linear function that transfers the internally generated sum for each PE to a potential output value. Available transfer functions are:

Linear Hyperbolic tangent (TanH) Sigmoid DNNA Sine

Learn

The Learn Browse button is used to select the training data file for the network. Alternatively, you can type the filename into the text entry field. Input data files have a file extension of .nna, .txt or any other extension, but they must have an extension (typing "myfile" becomes "myfile.nna").

Recall/Test

The Recall/Test Browse button allows you to select a data file for recall and test execution. Alternatively, you can type the filename into the text entry field. Like the Learn data file, Recall/Test input data files also have a file extension of .nna, .txt or any other extension.

Connect Prior

For each layer, makes connections from all previous layers.

Auto-Associative

If Auto-Associative is checked, NeuralWorks sets the number of output PEs to the number of input PEs and, when training, uses the input data as the desired output. Backpropagation networks can use this mode for applications such as data compression or noise filtering.

Linear Output

Linear Output overrides the selected transfer function and forces a linear transfer function for the output layer. The linear transfer function takes the current sum for each PE as its output.

SoftMax Output

Softmax forces both a linear transfer function and a "softmax output function". You should use this only on applications that meet these two criteria:

The application is a classification problem The components of the desired output add up to one.

Fast Learning

Selecting this check box uses a fast version of the back-propagation control strategy. We also recommend that you use the delta-rule learning rule for fast learning.

Gaussian Init

Attaches the Gaussian noise function (instead of the uniform noise function) to all layers in the network. This function is used for both initialization and noise. Three things must occur before a layer actually uses the noise function:

The control strategy must call for a noise function.

- The learn and/or recall temperature value in the learning and recall schedule must be set to a non-zero value. By default, NeuralWorks sets these to zero.
- A noise function must be attached to the layer. Uniform noise adds a random number within a specified range to each PE summation value in the layer. The range for random numbers is plus or minus one percent of the temperature value. The random number for the noise value is different for each PE in the layer. Gaussian noise is similar to uniform noise, except that the distribution of random numbers within the range is along a bell curve, i.e., more concentrated toward the middle of the range than at the ends.

Minimal Config.

Minimal Config. provides the minimum number of weight fields required for a learning rule. For instance, a minimum configuration of the normalized cumulative delta rule will have two weight fields. Not checking this would provide the normalized cumulative delta-rule with three weight fields, the third being used for momentum. You should only check this box if your computer system does not have enough memory for the default configuration.

MinMax Table

Selecting this check box causes NeuralWorks to compute the low and high values for each data field in the selected data files and store these in a MinMax Table. When data is presented to the network, it is scaled to the network ranges using the MinMax table and the network range values (set through the IO/Parameters command).

Bipolar Inputs

Used in conjunction with a MinMax table. If this is selected and a MinMax Table is used, input values are mapped to lie between -1.0 and 1.0. If it is not selected and a MinMax Table is used, input values are mapped to between 0.0 and 1.0.

Cascade Learn

This activates "Cascade Learn" in the Run menu which implements a form of Cascade Correlation training. In such networks, PEs in the hidden layer are incrementally added, and are trained individually to take responsibility for any remaining output error. Each hidden unit receives input from both the input buffer and from all prior hidden PEs. If you use this option, you still need to specify a number of hidden PEs. This provides a pool of PEs which the Cascade Learning algorithm will activate one by one until no more improvement occurs. Any disabled PEs left after convergence occurs can be purged using the "Utilities/Purge" menu option.

Epoch

Epoch size is used for all learning rules except Delta-Rule. However, even if the Delta-Rule is being used, it is useful to set an epoch since certain instruments (such as RMS Error graph) update their calculations at the end of an epoch.

Set Epoch From File

This will set the epoch to the number of vectors in the training file. However, it is recommended that the Epoch size should be LESS THAN the number of vectors in the training file, and for most problems an upper bound of 200 for the epoch is valid.

RMS Error

Choosing this instrument creates a strip chart instrument that shows the RMS error of the output layer. For some applications (though not all) as learning progresses you should see this graph slowly converge to an error near zero. You can activate the convergence threshold in the RMS instrument, which, when reached, will stop network training. Use the Graph/Edit tool to activate Convergence Criterion and change the convergence threshold value. The convergence threshold is set to 0.001 by default.

Kohonen Self Organizing Maps

NeuralWare defines the dialog box components and their functions as:

Inputs

This sets the # of Inputs going into the SOM.

Rows and # Cols

Sets the # of neurons in the rows and columns of the two-dimensional grid. Use large (10x10 or greater) to find number of categories. If the number of failure mechanisms are know, use a number of Rows and Columns whose product is equal to greater then know number of mechanisms.

Hidden and Output

These are for if you want a mapping network at the output of the SOM. Set the values to 0 if no hidden layer is created.

SOM Steps

This sets the number of learning iterations for the SOM. (If you use the Set Epoch From File button, # SOM Steps is set to 30 times the number of hits in the training file.)

LCoef

Sets the first item under LCoef to be the desired learning rate for the Kohonen layer.

Beta

Beta is used in the equation to update the estimate of how frequently a Kohonen neuron wins. If you use the Set Epoch From File button the default value for Beta is set based on the number of training cases: Beta = 1 / (# training hits)

Gamma

Gamma is used in conjunction the frequency estimation to determine a bias term which is added to the Euclidean distance function for the ith Kohonen neuron. The effect of this is to favor neurons which have not won recently, and this encourages all the Kohonen neurons to be utilized.

Coord. Layer

This creates a layer above the two-dimensional Kohonen layer which outputs the feature map as a pair of coordinates. These coordinates are normalized to lie between -1.0 and 1.0.

Output Network

This creates a back-propagation layer above the two-dimensional coordinate layer or above the coordinate layer. Use this option if you have desired outputs to which you want to map.

MinMax Table

If selected, NeuralWorks will compute the low and high values for each data field in the selected data files, and store these in a MinMax Table.

Interpolate

If this is checked, the top three winners in the two-dimensional Kohonen layer are calculated at each Kohonen learn step.

Neighborhood

1. Choose between a Diamond shaped or Square shaped neighborhood, or Alternating square and diamond shaped neighborhoods.

2. Choose the neighborhood sizes by setting the Starting Width and Ending Width. We recommend that you start with a large width (7 or above) and progress to a small width (1 or 3) by the end.

3. Optionally select horizontal or vertical wrap-around.

Learn

Select a training file using the Learn Browse button. Alternatively, you can type the filename into the text entry field.

Recall/Test

Select a test file using the Recall/Test Browse button. Alternatively, you can type the filename into the text entry field.

Connect Prior

If selected, and your network has a hidden layer, the output layer is fully connected from the Kohonen or coordinate layer as well as from the hidden layer.

Connect Bias

If selected, this creates connections from the bias neuron to the mapping layers.

Linear Output

If selected, this overrides the selected transfer function and forces a linear transfer function for the output layer.

SoftMax Output

If selected, this option forces a linear transfer function and a SoftMax output function. This should only be used with classification type problems in which the desired output is categorical in nature, and the components of each desired output vector sum to 1.

Epoch

The epoch size is used for all learning rules in the mapping layers except the delta-rule. However, even if the delta-rule is being used, it is useful to set an epoch since certain instruments (such as RMS Error graph) update their calculations at the end of an epoch. Set Epoch From File button will set the epoch to the number of hits in the training file.

Learn Rule

- Delta-rule, which is the standard back-propagation learning rule.
- Norm-cum-delta, a rule which accumulates weight changes and updates the weights at end of epoch. It is normalized so that the learning rate is independent of the epoch size.
- Ext DBD (extended delta-bar-delta)
- QuickProp
- MaxProp
- Delta-bar-delta

The chosen rule is used for each layer of the network.

Transfer

- Linear
- TanH (hyperbolic tangent)
- Sigmoid
- DNNA

The tool recommends that you use either the TanH or sigmoid transfer functions. The chosen function is used for each layer of the network.

APPENDIX C

BACKPROPAGATION NEURAL NETWORK RESULTS

0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	RMS Error
51	51	51	51	51	51	51	51	51	51	Epoch
HUEI	HUEL	HUEI	Huet	Hnet	Hus!	Hnst	Hnet	Hnst	Hnst	Transfer
I U DN	NCD	NCD	I O O N	NCD	NCD	NCD	NCD	NCD	NCD	Learn Rule
50.0	90.0	<u>60 0</u>	90.0	90'0	90'0	90°0	90'0	90'0	<u>90'0</u>	F' Offset
6.0	200	200	90	9.0	9.0	9.0	9 0	9.0	9'0	L. Coef, Ratio
0007	0007	000/	0007	0007	0007	0007	0002	0002	0002	Trans. Pt.
+ 0	+0	# 0	1.0	CQ.U	9.0	99.0	9°0	970	70	Momentum
			20	330	GI O	GI.0	GL O	GL 0	91.0	W.
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						00'0	00.0	00.0	00.0	KIND ELLOI
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Hnet	Hnet	Hnet	Hnet	Hnet	Hnet	Hnet	Hnet	Hnet	Hoet	0030631
NCD	NCD	<u>NCD</u>	NCD	NCD	NCD	NCD	NCD	NCD	NCD	1 aaro Bule
0.05	0.05	<u>90'0</u>	0.05	90'0	90.0	90.0	90.0	90.0	90.0	E' Ottset
<u> </u>	<u>9</u> °0	0°2	9.0	<u> </u>	0.5	9.0	9.0	<u> </u>	90	L Coef Ratio
0002	0002	0002	0002	12000	14000	13000	12000	11000	10000	Trans. Pt.
0 32	0'3	0"52	0,2	0.4	0.4	† 0	0.4	0.4	0.4	Momentum
91.0	91.0	91.0	910	012	012	91°0	91.0	G1.0	91.0	-, coet,
0'3	03	5.0	5.0	0.3	0.3	6,0	6.0	6,0	6,0	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
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19	19	19	19	19	19	19	19	19	19	sindni
40	30	38	12	39	32	34	33	35	31	Network Number
										
0.03	£0 [°] 0	6.03	6.03	0.03	0.03	0.03	6.03	0.03	0.03	RMS Error
51	51	51	51	51	51	51	51	51	51	Epoch
Huet	Huet	Huet	Huet	Hnet	Huet	Hnst	Hnet	Hnst	Hnet	Transfer
		I I I I I I I I I I I I I I I I I I I					ACD		ACD	Learn Kule
60.0	60.0		60.0	<u>60'0</u>	<u>c0'0</u>	GL'O		1.0		10SHO H
50	0.0	300	300	200	200	6.0	<u>ç 0</u>	6.0	60	L, COBI, Katio
0006	0000	000/	0009	2000		0000/	0061	00001	00001	'14 'SUBLI
+ 0	+ 0	+0	+ 0	+ 0	+ 0	+*0	+ 0	+0000	+0000	
01		01	01	01	01.0	01	01.0	010	01.0	antromold
910	910	910	910	910	910	910	910	910	910	L. Coef,
50	50	50	1 20	50		03	50	<u> </u>	50	Induno
							<u> </u>		<u>۲</u>	Outnut
13	13	13	13	13	13	13	11	53	55	f nebbiH
19	19	19	19	19	19	19	19	19	19	stnani
30	58	58	16	56	52	54	53	55	51	Network Number
										r
0.03	6.03	60.0	6.03	6.03	603	0 03	0.03	0.03	0'03	RMS Error
51	51	51	51	51	51	51	51	51	51	Epoch
Hnet	Hnet	Hnet	Hust	Hnet	Hnet	Hnet	Hne!	Hnet	Hnst	Transfer
NCD	NCD	NCD	NCD	NCD	NCD	NCD	NCD	NCD	NCD	Learn Rule
1.0	10	1.0	1.0	1.0	10	1.0	10	1.0	1,0	F' Offset
9'0	9'0	9°0	9.0	9°0	9 [*] 0	G [*] 0	9 [°] 0	9°0	9°0	L, Coef, Ratio
10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	, iq , enerT
0.4	0.4	0.4	0.4	0.4	0.4	0 4	7 0	0 4	† 0	Momentum
91.0	0.15	91.0	91.0	910	0,15	012	91°0	G1 [*] 0	91.0	1000 1-
03	03	0*3	03	03	0*3	6.0	6 <u>,</u> 0	£.0	5.0	L. Coet
ŀ	L	ŀ	1	L	ŀ	ŀ	ł	ŀ	ł	Output
51	50	61	81	2٤	91	91	14	13	15	L nebbiH
19	19	19	19	19	19	19	19	19	19	sinduj
50	61	81	21	91	SL	14	13	15	11	Network Number
0.03	0.03	0.03	0 03	0.03	0 03	0.03	0.03	0.03	£0'0	KWS EITOF
51	51	51	51	51	51	12	12	17.	L7	chocy
Hnst	Hnet	Huet	Huet	Hnet	Hnet	Huer	Hue	Huei	HURI	JAISUPLI
NCD	NCD	NCD	NCD	NCD	NCD	NCD	NCD		(I)NI	BIDN UIPAT
10	10	10	10	10	LO	1.0	1.0	1.0		
90	90	9'0	90	90	90	g'n	C'O	<u> </u>	C 0	E' Offent
00001	00001	00001	00001	0000	00001	00001	00001	00001	30	L. Coof Batio
t 0	*0	*0	t*'0	tr'n	# 0	#'0	+0	+'0	00001	Trans Pt
<u>ci n</u>	CI'O	<u>ci n</u>	GI O	CI'O			<u> </u>			mitnamoM
	50	50	50	50	50	910	310	310	210	L, Coef,
1					13	1 20		1.0	<u> </u>	
				<u>ا</u>			<u> </u>			JudinO
			8	4	9	9	7	3	2	r nebbiH
19	19	19	19	19	19	19	19	19	19	sanduj
1 01	6	1	1	9	9	P	3	5	10 STOP 10, 1241	Network Number

Network Number	51	52	53	54	55	56	57	58	59	60
Inputs	61	61	61	61	61	61	61	61	61	61
Hidden 1	13	13	13	13	13	13	13	13	13	13
Output	1	1	1	1	1	1	1	1	1	1
L. Coef	0.25	0.3	0.35	0.4	0.45	0.5	0.3	0.3	0.3	0.3
	0.15	0.15	0.15	0.15	0.15	0.15	0-05	0 1	0.15	02
Momentum	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Trans. Pt.	7000	7000	7000	7000	7000	7000	7000	7000	7000	7000
L. Coef. Ratio	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
F' Offset	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Learn Rule	NCD									
Transfer	tanH									
Epoch	21	21	21	21	21	21	21	21	21	21
RMS Error	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Network Number	61	62	63	64	65	66	67	68	69	70
Inputs	61	61	61	61	61	61	61	61	61	61
Hidden 1	13	13	13	13	13	13	_13	13	13	13
Output	1	1	1	1	1	1	1	1	1	1
L. Coef.	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
	0.25	0.3	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Momentum	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Trans. Pt.	7000	7000	7000	7000	7000	7000	7000	7000	7000	7000
L. Coef. Ratio	0.5	0.5	0,1	0.15	0.2	0.25	0.3	0.35	0.4	0.45
F' Offset	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Learn Rule	NCD									
I ranster	tanH									
Epoch	21	21	21	21	21	21	21	21	21	21
RMS Error	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Network Number	74	72	72	74	75	76	77	79	70	80
Inputs	61	61	61	61	61	61	61	61	61	61
Hidden 1	13	13	13	13	13	13	13	13	13	13
Output	1	1	1	1	1	1	1	1	1	1
	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
L. Coef.	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Momentum	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Trans, Pt.	7000	7000	7000	7000	7000	7000	7000	7000	7000	7000
L. Coef. Ratio	0.5	0.55	0.6	0.65	0.7	0.75	0.8	0.85	0.9	0.35
F' Offset	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Learn Rule	NCD									
Transfer	tanH									
Epoch	21	21	21	21	21	21	21	21	21	21
RMS Error	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.01

Network Number	81	82	83	84
Inputs	61	61	61	61
Hidden 1	13	13	13	13
Output	1	1	1	1
L Coof	0.3	0.3	0.3	0.3
L. COET.	0.15	0.15	0.15	0.15
Momentum	0.4	0.4	0.4	0.4
Trans. Pt.	7000	7000	7000	7000
L. Coef. Ratio	0.35	0.35	0.35	0.35
F' Offset	0.05	0.05	0.05	0.05
Learn Rule	NCD	NCD	NCD	NCD
Transfer	tanH	tanH	tanH	tanH
Epoch	21	21	21	21
RMS Error	0.02	0.03	0.04	0.05

	Actual	Net 1	% Error	Net 2	% Error	Net 3	% Error	Net 4	% Error	Net 5	% Error
	336	333.72	-0.679	334.36	-0.487	333.83	-0.647	333.01	-0.891	333.27	-0.811
at	372.5	372.69	0.051	372.50	0.000	372.52	0.005	372.30	-0.053	372.51	0.003
9	357.5	357.58	0.023	357.75	0.071	357.59	0.025	357.42	-0.023	357.56	0.016
ő	312.5	312.26	-0.077	312.13	-0.117	311.94	-0.180	312.31	-0.061	312.16	-0.108
Ē	392.5	392.15	-0.090	392.13	-0.095	392.50	0.001	392.40	-0.026	392.49	-0.002
2	375	378.19	0.849	378 32	0.884	378 14	0.836	377 35	0.626	377 78	0.740
	365	364 68	-0.088	363.85	-0.315	365 31	0.030	366.04	0.020	365.36	0.740
	375	369.20	-1 546	303.65	4.071	303.31	0.004	300.04	0,205	305.30	0.098
	312.5	304.06	26.297	393.04	4.971	332.70	-11.281	335.64	-10.496	346.63	-7.564
	312.5	394.90	20.367	354.24	13.356	324.55	3.857	309.98	-0.807	308 13	-1 399
at	305	393.42	0.335	396.01	8.496	318.89	-12.632	381.62	4.555	399.35	9.410
9	327.5	373.99	14,196	389.70	18.993	374.59	14.378	327.61	0.033	343.51	4.889
es	340	349.48	2.787	376.81	10.825	323.93	-4.726	317.65	-6.575	335.09	-1.443
F	363	366.05	0.839	375.45	3.429	351.43	-3.187	341.33	-5.969	353.25	-2.687
	372.5	395.91	6.283	378.30	1.556	379.70	1.933	369.46	-0.817	371.73	-0.206
	367.5	341.85	-6.980	399.83	8.798	370.34	0.773	369.44	0.527	358.89	-2.342
		Worst	26.387	Worst	18.993	Worst	14.378	Worst	-10.496	Worst	9.410
	Actual	Net 6	% Error	Net 7	% Error	Net 8	% Error	Net 9	% Error	Net 10	% Error
	336	333.16	-0.844	333.71	-0.681	333.26	-0.816	333.31	-0.801	333 19	-0.838
Ē	372.5	372.56	0.016	372.24	-0.069	372 58	0.021	372 55	0.013	372 48	-0.006
۵	357.5	357.48	-0.005	357.70	0.055	357.53	0.007	357.58	0.010	357 55	0.014
D D	312.5	312 16	-0.110	312.26	0.000	212.14	0.007	212.17	0.021	212.12	0.014
12	302.5	302.36	0.035	302.20	-0.070	302.14	-0.110	302.00	-0, 107	302.00	-0,119
a l	275	377.67	-0.035	392.00	-0.113	392.40	-0.011	392.29	-0.053	393.00	0.128
F	375	377.07	0.711	378.11	0.828	377.80	0.746	377.86	0.763	377.69	0.717
<u> </u>	305	305.48	0.131	364.33	-0,185	365.23	0.063	365.26	0.071	365.40	0.109
	3/5	338.17	-9.821	383.94	2,383	329.81	-12,050	334,11	-10,905	357.53	-4.658
	312.5	313.60	0.353	385.49	23.356	340.20	8,865	339.58	8.665	322.33	3.146
ata	365	357.85	-1.959	380.75	4.316	390.72	7.047	369.42	1.212	375.42	2.854
Ö	327.5	361.13	10.269	355.10	8.429	338.40	3.329	339.04	3.522	338.73	3.429
st	340	321.55	-5.426	335.53	-1.316	317.94	-6.487	321.56	-5.424	320.93	-5.608
۳,	363	342.36	-5.685	339.00	-6.610	352.33	-2.939	330.53	-8.945	342.04	-5.775
	372.5	376.12	0.971	391.65	5.141	377.34	1,299	382.89	2,790	385.64	3.527
	367.5	367.61	0.029	386.55	5.183	344.76	-6.187	343.11	-6.636	366.18	-0.359
-		Worst	10.269	Worst	23.356	Worst	-12.050	Worst	-10.905	Worst	-5.775
											and the second se
	Actual	Net 11	% Error	Net 12	% Error	Net 13	% Error	Net 14	% Error	Net 15	% Error
	Actual 336	Net 11 333.32	% Error -0.798	Net 12 333.07	% Error -0.872	Net 13 333.74	% Error -0.674	Net 14 333.48	% Error -0.751	Net 15 333.14	% Error -0.851
ţ	Actual 336 372,5	Net 11 333.32 372.49	% Error -0.798 -0.001	Net 12 333.07 372.35	% Error -0.872 -0.040	Net 13 333.74 372.71	% Error -0.674 0.056	Net 14 333.48 372.63	% Error -0.751 0.035	Net 15 333.14 372.81	% Error -0.851 0.082
Data	Actual 336 372.5 357.5	Net 11 333.32 372.49 357.46	% Error -0.798 -0.001 -0.011	Net 12 333.07 372.35 357.48	% Error -0.872 -0.040 -0.006	Net 13 333.74 372.71 357.55	% Error -0.674 0.056 0.013	Net 14 333.48 372.63 357.42	% Error -0.751 0.035 -0.022	Net 15 333.14 372.81 357.41	% Error -0.851 0.082 -0.024
ng Data	Actual 336 372.5 357.5 312.5	Net 11 333.32 372.49 357.46 312.30	% Error -0.798 -0.001 -0.011 -0.064	Net 12 333.07 372.35 357.48 312.02	% Error -0.872 -0.040 -0.006 -0.154	Net 13 333.74 372.71 357.55 312.25	% Error -0.674 0.056 0.013 -0.080	Net 14 333.48 372.63 357.42 312.61	% Error -0.751 0.035 -0.022 0.037	Net 15 333.14 372.81 357.41 312.40	% Error -0.851 0.082 -0.024 -0.031
ning Data	Actual 336 372.5 357.5 312.5 392.5	Net 11 333.32 372.49 357.46 312.30 392.18	% Error -0.798 -0.001 -0.011 -0.064 -0.080	Net 12 333.07 372.35 357.48 312.02 392.43	% Error -0.872 -0.040 -0.006 -0.154 -0.019	Net 13 333.74 372.71 357.55 312.25 392.42	% Error -0.674 0.056 0.013 -0.080 -0.020	Net 14 333.48 372.63 357.42 312.61 391.62	% Error -0.751 0.035 -0.022 0.037 -0.224	Net 15 333.14 372.81 357.41 312.40 392.44	% Error -0.851 0.082 -0.024 -0.031 -0.016
raining Data	Actual 336 372.5 357.5 312.5 392.5 375	Net 11 333.32 372.49 357.46 312.30 392.18 377.59	% Error -0.798 -0.001 -0.011 -0.064 -0.080	Net 12 333.07 372.35 357.48 312.02 392.43 377.61	% Error -0.872 -0.040 -0.006 -0.154 -0.019 0.697	Net 13 333.74 372.71 357.55 312.25 392.42 378.20	% Error -0.674 0.056 0.013 -0.080 -0.020 0.854	Net 14 333.48 372.63 357.42 312.61 391.62 377.92	% Error -0.751 0.035 -0.022 0.037 -0.224 0.778	Net 15 333.14 372.81 357.41 312.40 392.44 377.61	% Error -0.851 0.082 -0.024 -0.031 -0.016 0.696
Training Data	Actual 336 372.5 357.5 312.5 392.5 392.5 375	Net 11 333.32 372.49 357.46 312.30 392.18 377.59 265.45	% Error -0.798 -0.001 -0.011 -0.064 -0.080 0.690 0.124	Net 12 333.07 372.35 357.48 312.02 392.43 377.61 364.82	% Error -0.872 -0.040 -0.006 -0.154 -0.019 0.697	Net 13 333.74 372.71 357.55 312.25 392.42 378.20 365.32	% Error -0.674 0.056 0.013 -0.080 -0.020 0.854 0.089	Net 14 333.48 372.63 357.42 312.61 391.62 377.92 365.06	% Error -0.751 0.035 -0.022 0.037 -0.224 0.778 0.016	Net 15 333.14 372.81 357.41 312.40 392.44 377.61 365.47	% Error -0.851 0.082 -0.024 -0.031 -0.016 0.696 0.127
Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 275	Net 11 333.32 372.49 357.46 312.30 392.18 377.59 365.45 244.70	% Error -0.798 -0.001 -0.011 -0.064 -0.080 0.690 0.124 8.056	Net 12 333.07 372.35 357.48 312.02 392.43 377.61 364.82	% Error -0.872 -0.040 -0.006 -0.154 -0.019 0.697 -0.048 6.112	Net 13 333.74 372.71 357.55 312.25 392.42 378.20 365.32 345.61	% Error -0.674 0.056 0.013 -0.080 -0.020 0.854 0.089 7.936	Net 14 333.48 372.63 357.42 312.61 391.62 377.92 365.06	% Error -0.751 0.035 -0.022 0.037 -0.224 0.778 0.016	Net 15 333.14 372.81 357.41 312.40 392.44 377.61 365.47 248.26	% Error -0.851 0.082 -0.024 -0.031 -0.016 0.696 0.127 7.402
Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 365 375	Net 11 333.32 372.49 357.46 312.30 392.18 377.59 365.45 344.79 322.24	% Error -0.798 -0.001 -0.011 -0.064 -0.080 0.690 0.124 -8.056 -0.202	Net 12 333.07 372.35 357.48 312.02 392.43 377.61 364.82 352.08	% Error -0.872 -0.040 -0.006 -0.154 -0.019 0.697 -0.048 -6.113 5.259	Net 13 333.74 372.71 357.55 312.25 392.42 378.20 365.32 345.61	% Error -0.674 0.056 0.013 -0.080 -0.020 0.854 0.089 -7.836 -7.836	Net 14 333.48 372.63 357.42 312.61 391.62 377.92 365.06 339.64 324.84	% Error -0.751 0.035 -0.022 0.037 -0.224 0.778 0.016 -9.428 7.440	Net 15 333.14 372.81 357.41 312.40 392.44 377.61 365.47 348.36	% Error -0.851 0.082 -0.024 -0.031 -0.016 0.696 0.127 -7.103
Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 365 375 312.5	Net 11 333.32 372.49 357.46 312.30 392.18 377.59 365.45 344.79 332.31	% Error -0.798 -0.001 -0.011 -0.064 -0.080 0.690 0.124 -8.056 6.338	Net 12 333.07 372.35 357.48 312.02 392.43 377.61 364.82 352.08 328.93 328.93	% Error -0.872 -0.040 -0.006 -0.154 -0.019 0.697 -0.048 -6.113 5.258	Net 13 333.74 372.71 357.55 312.25 392.42 378.20 365.32 345.61 323.99	% Error -0.674 0.056 0.013 -0.080 -0.020 0.854 0.089 -7.836 3.677 2.867	Net 14 333.48 372.63 357.42 312.61 391.62 377.92 365.06 339.64 334.84 334.84	% Error -0.751 0.035 -0.022 0.037 -0.224 0.778 0.016 -9.428 7.149 7.149	Net 15 333.14 372.81 357.41 312.40 392.44 377.61 365.47 348.36 349.92	% Error -0.851 0.082 -0.024 -0.031 -0.016 0.696 0.127 -7.103 11.973 2.552
ata Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 312.5 365 375 312.5 365	Net 11 333.32 372.49 357.46 312.30 392.18 377.59 365.45 344.79 332.31 350.39	% Error -0.798 -0.001 -0.011 -0.064 -0.080 0.690 0.124 -8.056 6.338 -4.003	Net 12 333.07 372.35 357.48 312.02 392.43 377.61 364.82 352.08 328.93 352.96	% Error -0.872 -0.040 -0.006 -0.154 -0.019 0.697 -0.048 -6.113 5.258 -3.298 -3.298	Net 13 333.74 372.71 357.55 312.25 392.42 378.20 365.32 345.61 323.99 350.89	% Error -0.674 0.056 0.013 -0.080 -0.020 0.854 0.089 -7.836 3.677 -3.867 -3.867	Net 14 333.48 372.63 357.42 312.61 391.62 377.92 365.06 339.64 334.84 379.20	% Error -0.751 0.035 -0.022 0.037 -0.224 0.778 0.016 -9.428 7.149 3.890 4.542	Net 15 333.14 372.81 357.41 312.40 392.44 377.61 365.47 348.36 349.92 352.03	% Error -0.851 0.082 -0.024 -0.031 -0.016 0.696 0.127 -7.103 11.973 -3.553 5.559
Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 312.5 365 327.5 365 327.5	Net 11 333.32 372.49 357.46 312.30 392.18 377.59 365.45 344.79 332.31 350.39 352.64	% Error -0.798 -0.001 -0.011 -0.064 -0.080 0.690 0.124 -8.056 6.338 -4.003 7.675	Net 12 333.07 372.35 357.48 312.02 392.43 377.61 364.82 352.08 328.93 352.96 331.29 331.29	% Error -0.872 -0.040 -0.006 -0.154 -0.019 0.697 -0.048 -6.113 5.258 -3.298 1.157	Net 13 333.74 372.71 357.55 312.25 392.42 378.20 365.32 345.61 323.99 350.89 350.89	% Error -0.674 0.056 0.013 -0.080 -0.020 0.854 0.089 -7.836 3.677 -3.867 8.884 9.215	Net 14 333.48 372.63 357.42 312.61 391.62 377.92 365.06 339.64 334.84 379.20 342.28 397.52	% Error -0.751 0.035 -0.022 0.037 -0.224 0.778 0.016 -9.428 7.149 3.890 4.512 2.557	Net 15 333.14 372.81 357.41 312.40 392.44 377.61 365.47 348.36 349.92 352.03 345.74 345.74	% Error -0.851 0.082 -0.024 -0.031 -0.016 0.696 0.127 -7.103 11.973 -3.553 5.568
est Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 365 312.5 365 375 365 312.5 365 327.5 340	Net 11 333.32 372.49 357.46 312.30 392.18 377.59 365.45 344.79 332.31 350.39 352.64 336.81	% Error -0.798 -0.001 -0.011 -0.064 -0.080 0.690 0.124 -8.056 6.338 -4.003 7.675 -0.938	Net 12 333.07 372.35 357.48 312.02 392.43 377.61 364.82 352.08 328.93 352.96 331.29 322.51	% Error -0.872 -0.040 -0.006 -0.154 -0.019 0.697 -0.048 -6.113 5.258 -3.298 1.157 -5.146	Net 13 333.74 372.71 357.55 312.25 392.42 378.20 365.32 345.61 323.99 350.89 356.60 330.67	% Error -0.674 0.056 0.013 -0.080 -0.020 0.854 0.089 -7.836 3.677 -3.867 8.884 -2.745	Net 14 333.48 372.63 357.42 312.61 391.62 377.92 365.06 339.64 334.84 379.20 342.28 327.80	% Error -0.751 0.035 -0.022 0.037 -0.224 0.778 0.016 -9.428 7.149 3.890 4.512 -3.587 -3.587	Net 15 333.14 372.81 357.41 312.40 392.44 377.61 365.47 348.36 349.92 352.03 345.74 317.75	% Error -0.851 0.082 -0.024 -0.031 -0.016 0.696 0.127 -7.103 11.973 -3.553 5.568 -6.544 -6.544
Test Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 312.5 365 327.5 340 363	Net 11 333.32 372.49 357.46 312.30 392.18 377.59 365.45 344.79 332.31 350.39 352.64 336.81 369.69	% Error -0.798 -0.001 -0.011 -0.064 -0.080 0.690 0.124 -8.056 6.338 -4.003 7.675 -0.938 1.842	Net 12 333.07 372.35 357.48 312.02 392.43 377.61 364.82 352.08 328.93 352.96 331.29 322.51 353.87	% Error -0.872 -0.040 -0.051 -0.154 -0.019 0.697 -0.048 -6.113 5.258 -3.298 1.157 -5.146 -2.516	Net 13 333.74 372.71 357.55 312.25 392.42 378.20 365.32 345.61 323.99 350.89 356.60 330.67 372.19	% Error -0.674 0.056 0.013 -0.080 -0.020 0.854 0.089 -7.836 3.677 -3.867 8.884 -2.745 2.532	Net 14 333.48 372.63 357.42 312.61 391.62 377.92 365.06 339.64 334.84 379.20 342.28 327.80 370.31	% Error -0.751 0.035 -0.022 0.037 -0.224 0.778 0.016 -9.428 7.149 3.890 4.512 -3.587 2.014	Net 15 333.14 372.81 357.41 312.40 392.44 377.61 365.47 348.36 349.92 352.03 345.74 317.75 360.61	% Error -0.851 0.082 -0.024 -0.031 -0.016 0.696 0.127 -7.103 11.973 -3.553 5.568 -6.544 -0.658
Test Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 312.5 365 327.5 340 363 372.5	Net 11 333.32 372.49 357.46 312.30 392.18 377.59 365.45 344.79 332.31 350.39 352.64 336.81 369.69 387.35	% Error -0.798 -0.001 -0.011 -0.064 -0.080 0.690 0.124 -8.056 6.338 -4.003 7.675 -0.938 1.842 3.987	Net 12 333.07 372.35 357.48 312.02 392.43 377.61 364.82 352.08 328.93 352.96 331.29 322.51 353.87 376.89	% Error -0.872 -0.040 -0.056 -0.154 -0.019 0.697 -0.048 -6.113 5.258 -3.298 1.157 -5.146 -2.516 1.180	Net 13 333.74 372.71 357.55 312.25 392.42 378.20 365.32 345.61 323.99 350.89 356.60 330.67 372.19 377.65	% Error -0.674 0.056 0.013 -0.080 -0.020 0.854 0.089 -7.836 3.677 -3.867 8.884 -2.745 2.532 1.384	Net 14 333.48 372.63 357.42 312.61 391.62 377.92 365.06 339.64 334.84 379.20 342.28 327.80 370.31 381.71	% Error -0.751 0.035 -0.022 0.037 -0.224 0.778 0.016 -9.428 7.149 3.890 4.512 -3.587 2.014 2.473	Net 15 333.14 372.81 357.41 312.40 392.44 377.61 365.47 348.36 349.92 352.03 345.74 317.75 360.61 386.05	% Error -0.851 0.082 -0.024 -0.016 0.696 0.127 -7,103 11.973 -3.553 5.568 -6.544 -0.658 3.638
Test Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 312.5 365 327.5 365 327.5 365 327.5 365 327.5 365 327.5 365 327.5 365 327.5 365 327.5 365 327.5 365 327.5 365 327.5 365 327.5 365 375 365 375 365 327.5 365 375 365 375 365 375 365 375 365 375 365 375 365 327.5 365 375 365 327.5 365 327.5 365 327.5 365 327.5 365 327.5 327.5 365 327.5 365 327.5 327.5 365 327.5 365 327.5 365 327.5 365 375 365 375 365 375 365 375 365 375 365 375 365 375 365 375 365 375 365 375 365 375 365 375 365 375 375 365 375 365 375 375 365 375 365 375 365 375 365 375 365 375 365 375 365 375 365 375 375 365 375 365 375 365 375 365 375 365 375 365 375 365 375 365 375 365 375 365 375 365 375 365 375 365 375 365 375 365 375 365 375 365 375 365 365 365 375 365 365 365 365 365 365 365 36	Net 11 333.32 372.49 357.46 312.30 392.18 377.59 365.45 344.79 332.31 350.39 352.64 336.81 369.69 387.35 380.14	% Error -0.798 -0.001 -0.011 -0.064 -0.080 0.690 0.124 -8.056 6.338 -4.003 7.675 -0.938 1.842 3.987 3.439	Net 12 333.07 372.35 357.48 312.02 392.43 377.61 364.82 352.08 328.93 352.96 331.29 322.51 353.87 376.89 374.05	% Error -0.872 -0.040 -0.052 -0.154 -0.019 0.697 -0.048 -6.113 5.258 -3.298 1.157 -5.146 -2.516 1.180 1.781	Net 13 333.74 372.71 357.55 312.25 392.42 378.20 365.32 345.61 323.99 350.89 356.60 330.67 372.19 377.65 387.13	% Error -0.674 0.056 0.013 -0.080 -0.020 0.854 0.089 -7.836 3.677 -3.867 8.884 -2.745 2.532 1.384 5.342	Net 14 333.48 372.63 357.42 312.61 391.62 376.92 365.06 339.64 334.84 379.20 342.28 327.80 370.31 381.71 373.36	% Error -0.751 0.035 -0.022 0.037 -0.224 0.778 0.016 -9.428 7.149 3.890 4.512 -3.587 2.014 2.473 1.595	Net 15 333.14 372.81 357.41 312.40 392.44 377.61 365.47 348.36 349.92 352.03 345.74 317.75 360.61 386.05 374.74	% Error -0.851 0.082 -0.024 -0.031 -0.016 0.696 0.127 -7.103 11.973 -3.553 5.568 -6.544 -0.658 3.638 1.971
Test Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 312.5 365 327.5 365 327.5 340 363 372.5 363 372.5 367.5	Net 11 333.32 372.49 357.46 312.30 392.18 377.59 365.45 344.79 332.31 350.39 352.64 336.81 369.69 387.35 380.14 Worst	% Error -0.798 -0.001 -0.011 -0.064 -0.080 0.690 0.124 -8.056 6.338 -4.003 7.675 -0.938 1.842 3.987 3.439 -8.056	Net 12 333.07 372.35 357.48 312.02 392.43 377.61 364.82 352.08 328.93 352.96 331.29 322.51 353.87 376.89 374.05 Worst	% Error -0.872 -0.040 -0.054 -0.019 0.697 -0.048 -6.113 5.258 -3.298 1.157 -5.146 -2.516 1.180 1.781 -6.113	Net 13 333.74 372.71 357.55 312.25 392.42 378.20 365.32 345.61 323.99 350.89 356.60 330.67 372.19 377.65 387.13 Worst	% Error -0.674 0.056 0.013 -0.080 -0.020 0.854 0.089 -7.836 3.677 -3.867 -8.884 -2.745 2.532 1.384 5.342 8.884	Net 14 333.48 372.63 357.42 312.61 391.62 377.92 365.06 339.64 334.84 379.20 342.28 327.80 370.31 381.71 373.36 Worst	% Error -0.751 0.035 -0.022 0.037 -0.224 0.778 0.016 -9.428 7.149 3.890 4.512 -3.587 2.014 2.473 1.595 -9.428	Net 15 333.14 372.81 357.41 312.40 392.44 377.61 365.47 348.36 349.92 352.03 345.74 317.75 360.61 386.05 374.74 Worst	% Error -0.851 0.082 -0.024 -0.031 -0.016 0.696 0.127 -7.103 11.973 -3.553 5.668 -6.544 -0.658 3.638 1.971 11.973
Test Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 327.5 340 363 372.5 367.5	Net 11 333.32 372.49 357.46 312.30 392.18 377.59 365.45 344.79 332.31 350.39 352.64 336.81 369.69 387.35 380.14 Worst	% Error -0.798 -0.001 -0.011 -0.064 -0.080 0.690 0.124 -8.056 6.338 -4.003 7.675 -0.938 1.842 3.987 3.439 -8.056	Net 12 333.07 372.35 357.48 312.02 392.43 377.61 364.82 352.08 328.93 352.96 331.29 322.51 353.87 376.89 374.05 Worst	% Error -0.872 -0.040 -0.054 -0.019 0.697 -0.048 -6.113 5.258 -3.298 1.157 -5.146 -2.516 1.781 -6.113	Net 13 333.74 372.71 357.55 312.25 392.42 378.20 365.32 345.61 323.99 350.89 350.89 356.60 330.67 372.19 377.65 387.13 Worst	% Error -0.674 0.056 0.013 -0.080 -0.020 0.854 0.089 -7.836 3.677 -3.867 -3.884 -3.745 -3.84 -3.844	Net 14 333.48 372.63 357.42 312.61 391.62 377.92 365.06 339.64 334.84 379.20 342.28 327.80 327.80 370.31 381.71 373.36 Worst	% Error -0.751 0.035 -0.022 0.037 -0.224 0.778 0.016 -9.428 7.149 3.890 4.512 -3.587 2.014 2.473 1.595 -9.428	Net 15 333.14 372.81 357.41 312.40 392.44 377.61 365.47 348.36 349.92 352.03 345.74 317.75 360.61 386.05 374.74 Worst	% Error -0.851 0.082 -0.024 -0.031 -0.016 0.696 0.127 -7.103 11.973 -3.553 5.568 -6.544 -0.658 3.638 1.971 11.973
Test Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 327.5 340 363 372.5 363 372.5 367.5 400 363 372.5 367.5 363 372.5 365 367.5 363 372.5 365 367.5 377.5 37	Net 11 333.32 372.49 357.46 312.30 392.18 377.59 365.45 344.79 332.31 350.39 352.64 336.81 369.69 387.35 380.14 Worst	% Error -0.798 -0.001 -0.011 -0.064 -0.080 0.690 0.124 -8.056 6.338 -4.003 7.675 -0.938 1.842 3.987 3.439 -8.056	Net 12 333.07 372.35 357.48 312.02 392.43 377.61 364.82 352.08 328.93 352.96 331.29 322.51 353.87 376.89 374.05 Worst Net 17	% Error -0.872 -0.040 -0.054 -0.019 0.697 -0.048 -6.113 5.258 -3.298 1.157 -5.146 -2.516 1.180 1.781 -6.113	Net 13 333.74 372.71 357.55 312.25 392.42 378.20 365.32 345.61 323.99 350.89 350.89 356.60 330.67 372.19 377.65 387.13 Worst	% Error -0.674 0.056 0.013 -0.080 -0.020 0.854 0.089 -7.836 3.677 -3.867 8.884 -2.745 2.532 1.384 5.342 8.884	Net 14 333.48 372.63 357.42 312.61 391.62 377.92 365.06 339.64 334.84 379.20 342.28 327.80 370.31 381.71 373.36 Worst Net 19	% Error -0.751 0.035 -0.022 0.037 -0.224 0.778 0.016 -9.428 7.149 3.890 4.512 -3.587 2.014 2.473 1.595 -9.428	Net 15 333.14 372.81 357.41 312.40 392.44 377.61 365.47 348.36 349.92 352.03 345.74 317.75 360.61 386.05 374.74 Worst Net 20	% Error -0.851 0.082 -0.024 -0.031 -0.016 0.696 0.127 -7.103 11.973 -3.553 5.568 -6.544 -0.658 3.638 1.971 11.973
Test Data Training Data	Actual 336 372.5 357.5 392.5 375 365 375 312.5 365 375 312.5 365 375 312.5 365 327.5 340 363 372.5 367.5 367 363 372.5 363 372.5 363 372.5 363 372.5 363 372.5 363 375 365 363 375 365 365 375 363 375 365 365 365 375 363 375 365 365 365 365 365 365 365 36	Net 11 333.32 372.49 357.46 312.30 392.18 377.59 365.45 344.79 332.31 350.39 352.64 336.81 369.69 387.35 380.14 Worst Net 16 333.30	% Error -0.798 -0.001 -0.011 -0.064 -0.080 0.690 0.124 -8.056 6.338 -4.003 7.675 -0.938 1.842 3.987 3.439 -8.056	Net 12 333.07 372.35 357.48 312.02 392.43 377.61 364.82 352.08 328.93 352.96 331.29 322.51 353.87 376.89 374.05 Worst Net 17 333.35	% Error -0.872 -0.040 -0.054 -0.154 -0.019 0.697 -0.048 -6.113 5.258 -3.298 1.157 -5.146 -2.516 1.180 1.781 -6.113	Net 13 333.74 372.71 357.55 312.25 392.42 378.20 365.32 345.61 323.99 350.89 350.89 356.60 330.67 372.19 377.65 387.13 Worst Net 18 333.43	% Error -0.674 0.056 0.013 -0.080 -0.020 0.854 0.089 -7.836 3.677 -3.867 8.884 -2.745 2.532 1.384 5.342 8.884 % Error -0.765	Net 14 333.48 372.63 357.42 312.61 391.62 377.92 365.06 339.64 334.84 379.20 342.28 327.80 370.31 381.71 373.36 Worst Net 19 333.68	% Error -0.751 0.035 -0.022 0.037 -0.224 0.778 0.016 -9.428 7.149 3.890 4.512 -3.587 2.014 2.473 1.595 -9.428 % Error -0.691	Net 15 333.14 372.81 357.41 312.40 392.44 377.61 365.47 348.36 349.92 352.03 345.74 317.75 360.61 386.05 374.74 Worst Net 20 333.03	% Error -0.851 0.082 -0.024 -0.031 -0.016 0.696 0.127 -7.103 11.973 -3.553 5.568 -6.544 -0.658 3.638 1.971 11.973
ata Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 312.5 365 375 312.5 365 375 312.5 365 375 312.5 365 375 312.5 365 375 312.5 365 375 312.5 365 375 312.5 365 375 312.5 365 375 312.5 365 375 312.5 365 375 312.5 365 375 312.5 365 375 312.5 365 375 312.5 365 375 312.5 365 375 312.5 365 375 312.5 365 327.5 365 327.5 365 327.5 340 363 372.5 367.5 367 363 372.5 365 375 365 327.5 365 327.5 365 327.5 365 327.5 365 327.5 365 327.5 365 327.5 365 327.5 365 327.5 365 327.5 365 327.5 365 327.5 365 327.5 367 367 367 367 367 367 367 367	Net 11 333.32 372.49 357.46 312.30 392.18 377.59 365.45 344.79 332.31 350.39 352.64 336.81 369.69 387.35 380.14 Worst Net 16 333.30 372.37	% Error -0.798 -0.001 -0.011 -0.064 -0.080 0.124 -8.056 6.338 -4.003 7.675 -0.938 1.842 3.987 3.439 -8.056 % Error -0.804 -0.036	Net 12 333.07 372.35 357.48 312.02 392.43 377.61 364.82 352.08 328.93 352.96 331.29 322.51 353.87 376.89 374.05 Worst Net 17 333.35 372.39	% Error -0.872 -0.040 -0.054 -0.154 -0.019 0.697 -0.048 -6.113 5.258 -3.298 1.157 -5.146 -2.516 1.180 1.781 -6.113	Net 13 333.74 372.71 357.55 312.25 392.42 378.20 365.32 345.61 323.99 350.89 356.60 330.67 372.19 377.65 387.13 Worst Net 18 333.43 372.40	% Error -0.674 0.056 0.013 -0.080 -0.020 0.854 0.089 -7.836 3.677 -3.867 8.884 -2.745 2.532 1.384 5.342 8.884 5.342 8.884 % Error -0.765 -0.026	Net 14 333.48 372.63 357.42 312.61 391.62 377.92 365.06 339.64 334.84 379.20 342.28 327.80 370.31 381.71 373.36 Worst Net 19 333.68 372.57	% Error -0.751 0.035 -0.022 0.037 -0.224 0.037 -0.224 0.016 -9.428 7.149 3.890 4.512 -3.587 2.014 2.473 1.595 -9.428 % Error -0.691 0.020	Net 15 333.14 372.81 357.41 312.40 392.44 377.61 365.47 348.36 349.92 352.03 345.74 317.75 360.61 386.05 374.74 Worst Net 20 333.03 372.81	% Error -0.851 0.082 -0.024 -0.031 -0.016 0.696 0.127 -7.103 11.973 -3.553 5.568 -6.544 -0.658 3.638 1.971 11.973
Data Test Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 312.5 365 327.5 340 363 372.5 367.5 Actual 336 372.5 357.5	Net 11 333.32 372.49 357.46 312.30 392.18 377.59 365.45 344.79 332.31 350.39 352.64 336.81 369.69 387.35 380.14 Worst Net 16 333.30 372.37 357.49	% Error -0.798 -0.001 -0.011 -0.064 -0.080 0.124 -8.056 6.338 -4.003 7.675 -0.938 1.842 3.987 3.439 -8.056 ************************************	Net 12 333.07 372.35 357.48 312.02 392.43 377.61 364.82 352.08 328.93 352.96 331.29 322.51 353.87 376.89 374.05 Worst Net 17 333.35 372.39 357.36	% Error -0.872 -0.040 -0.052 -0.019 0.697 -0.048 -6.113 5.258 -3.298 1.157 -5.146 -2.516 1.180 1.781 -6.113	Net 13 333.74 372.71 357.55 312.25 392.42 378.20 365.32 345.61 323.99 350.89 356.60 330.67 372.19 377.65 387.13 Worst Net 18 333.43 372.40 357.54	% Error -0.674 0.056 0.013 -0.080 -0.020 0.854 0.089 -7.836 3.677 -3.867 8.884 -2.745 2.532 1.384 5.342 8.884 5.342 8.884 5.342 8.884	Net 14 333.48 372.63 357.42 312.61 391.62 377.92 365.06 339.64 334.84 379.20 342.28 327.80 370.31 381.71 373.36 Worst Net 19 333.68 372.57 357.53	% Error -0.751 0.035 -0.022 0.037 -0.224 0.037 -0.224 0.778 0.016 -9.428 7.149 3.890 4.512 -3.587 2.014 2.473 1.595 -9.428 % Error -0.691 0.020 0.007	Net 15 333.14 372.81 357.41 312.40 392.44 377.61 365.47 348.36 349.92 352.03 345.74 317.75 360.61 386.05 374.74 Worst Net 20 333.03 372.81 357.37	% Error -0.851 0.082 -0.024 -0.031 -0.016 0.696 0.127 -7.103 11.973 -3.553 5.568 -6.544 -0.658 3.638 1.971 11.973
ng Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 312.5 365 327.5 365 327.5 365 327.5 365 327.5 365 327.5 365 327.5 365 375 365 327.5 365 375 365 327.5 365 375 365 327.5 365 375 365 375 375 325 325 325 325 325 325 325 32	Net 11 333.32 372.49 357.46 312.30 392.18 377.59 365.45 344.79 332.31 350.39 352.64 336.81 369.69 387.35 380.14 Worst Net 16 333.30 372.37 357.49 312.27	% Error -0.798 -0.001 -0.011 -0.064 -0.080 0.690 0.124 -8.056 6.338 -4.003 7.675 -0.938 1.842 3.987 3.439 -8.056 * -8.056	Net 12 333.07 372.35 357.48 312.02 392.43 377.61 364.82 352.08 328.93 352.96 331.29 322.51 353.87 376.89 374.05 Worst Net 17 333.35 372.39 357.36 312.75	% Error -0.872 -0.040 -0.056 -0.154 -0.019 0.697 -0.048 -6.113 5.258 -3.298 1.157 -5.146 -2.516 1.180 1.781 -6.113 % Error -0.030 -0.038 0.030	Net 13 333.74 372.71 357.55 312.25 392.42 378.20 365.32 345.61 323.99 356.60 330.67 330.67 372.19 377.65 387.13 Worst Net 18 333.43 372.40 357.54 312.04	% Error -0.674 0.056 0.013 -0.080 -0.020 0.854 0.089 -7.836 3.677 -3.867 8.884 -2.745 2.532 1.384 5.342 8.884 5.342 8.884 5.342 8.884 5.342 8.884	Net 14 333.48 372.63 357.42 312.61 391.62 377.92 365.06 339.64 334.84 379.20 342.28 327.80 370.31 381.71 373.36 Worst Net 19 333.68 372.57 357.53 312.23	% Error -0.751 0.035 -0.022 0.037 -0.224 0.778 0.016 -9.428 7.149 3.890 4.512 -3.587 2.014 2.473 1.595 -9.428 % Error -0.691 0.020 0.007 -0.088	Net 15 333.14 372.81 357.41 312.40 392.44 377.61 365.47 348.36 349.92 352.03 345.74 345.74 345.74 360.61 386.05 374.74 Worst Net 20 333.03 372.81 357.37 312.27	% Error -0.851 0.082 -0.024 -0.031 -0.016 0.696 0.127 -7.103 11.973 -3.553 5.568 -6.544 -0.658 3.638 1.971 11.973
Ining Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 365 327.5 365 327.5 365 327.5 365 327.5 365 375.5 365 375.5 375.5 375.5 312.5 365 375.5 312.5 327.5 37	Net 11 333.32 372.49 357.46 312.30 392.18 377.59 365.45 344.79 332.31 350.39 352.64 336.81 369.69 387.35 380.14 Worst Net 16 333.30 372.37 357.49 312.27 392.45	% Error -0.798 -0.001 -0.011 -0.064 -0.080 0.690 0.124 -8.056 6.338 -4.003 7.675 -0.938 1.842 3.987 3.439 -8.056 * -0.804 -0.036 -0.002 -0.074 -0.014	Net 12 333.07 372.35 357.48 312.02 392.43 377.61 364.82 352.08 328.93 352.96 331.29 322.51 353.87 376.89 374.05 Worst Net 17 333.35 372.39 357.36 312.75 392.30	% Error -0.872 -0.040 -0.050 -0.154 -0.019 0.697 -0.048 -6.113 5.258 -3.298 1.157 -5.146 -2.516 1.180 1.781 -6.113 % Error -0.788 -0.030 -0.038 0.079 -0.051	Net 13 333.74 372.71 357.55 392.42 378.20 365.32 345.61 323.99 350.89 356.60 330.67 372.19 377.65 387.13 Worst Net 18 333.43 372.40 357.54 312.04 392.11	% Error -0.674 0.056 0.013 -0.080 -0.020 0.854 0.089 -7.836 3.677 -3.867 -3.867 -3.867 -3.867 -3.867 -3.867 -3.867 -3.867 -3.867 -3.867 -3.867 -3.867 -0.785 -0.026 0.010 -0.147 -0.100	Net 14 333.48 372.63 357.42 312.61 391.62 377.92 365.06 339.64 334.84 379.20 342.28 327.80 370.31 381.71 373.36 Worst Net 19 333.68 372.57 357.53 312.23 392.49	% Error -0.751 0.035 -0.022 0.037 -0.224 0.778 0.016 -9.428 7.149 3.890 4.512 -3.587 2.014 2.473 1.595 -9.428 % Error -0.691 0.020 0.007 -0.088 -0.002	Net 15 333.14 372.81 357.41 312.40 392.44 377.61 365.47 348.36 349.92 352.03 345.74 317.75 360.61 386.05 374.74 Worst Net 20 333.03 372.81 357.37 312.27 392.65	% Error -0.851 0.082 -0.024 -0.031 -0.016 0.696 0.127 -7.103 11.973 -3.553 5.568 -6.544 -0.658 3.638 1.971 11.973
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Training Data Test Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 365 327.5 340 363 372.5 367.5 367.5 367.5 367.5 312.5 367.5 312.5 327.5 363 372.5 365 375.5 312.5 365 375.5 312.5 365 375.5 312.5 365 375.5 312.5 365 375.5 365.5 375.5	Net 11 333.32 372.49 357.46 312.30 392.18 377.59 365.45 344.79 332.31 350.39 352.64 336.81 369.69 387.35 380.14 Worst Net 16 333.30 372.37 357.49 312.27 392.45 377.77 365.54	% Error -0.798 -0.001 -0.011 -0.064 -0.080 0.690 0.124 -8.056 6.338 -4.003 7.675 -0.938 1.842 3.987 3.439 -8.056 % Error -0.804 -0.036 -0.002 -0.074 0.014 0.739 0.148	Net 12 333.07 372.35 357.48 312.02 392.43 377.61 364.82 352.08 328.93 352.96 331.29 322.51 353.87 376.89 374.05 Worst Net 17 333.35 372.39 357.36 312.75 392.30 377.93 365.21	% Error -0.872 -0.040 -0.051 -0.154 -0.019 0.697 -0.048 -6.113 5.258 -3.298 1.157 -5.146 -2.516 1.180 1.781 -6.113 % Error -0.788 -0.030 -0.038 0.079 -0.051 0.781 0.056	Net 13 333.74 372.71 357.55 312.25 392.42 378.20 365.32 345.61 323.99 350.89 350.89 356.60 330.67 372.19 377.65 387.13 Worst Net 18 333.43 372.40 357.54 312.04 392.11 377.88 365.18	% Error -0.674 0.056 0.013 -0.080 -0.020 0.854 0.089 -7.836 3.677 -3.867 8.884 -2.745 2.532 1.384 5.342 8.884 */ Error -0.765 -0.026 0.010 -0.147 -0.100 0.768 0.049	Net 14 333.48 372.63 357.42 312.61 391.62 377.92 365.06 339.64 334.84 379.20 342.28 327.80 370.31 381.71 373.36 Worst Net 19 333.68 372.57 357.53 312.23 392.49 378.19 364.66	% Error -0.751 0.035 -0.022 0.037 -0.224 0.778 0.016 -9.428 7.149 3.890 4.512 -3.587 2.014 2.473 1.595 -9.428 % Error -0.691 0.020 0.007 -0.088 -0.002 0.850 -0.093	Net 15 333.14 372.81 357.41 312.40 392.44 377.61 365.47 348.36 349.92 352.03 345.74 317.75 360.61 386.05 374.74 Worst Net 20 333.03 372.81 357.37 312.27 392.65 377.52 365.44	% Error -0.851 0.082 -0.024 -0.031 -0.016 0.696 0.127 -7.103 11.973 -3.553 5.568 -6.544 -0.658 3.638 1.971 11.973
Training Data Test Data Training Data	Actual 336 372.5 357.5 392.5 375 365 375 365 327.5 340 363 372.5 367.5 367.5 367.5 367.5 367.5 327.5 363 372.5 363 372.5 365 375.5 312.5 327.5 365 375.5 312.5 327.5 365 375.5 327.5 327.5 365 375.5	Net 11 333.32 372.49 357.46 312.30 392.18 377.59 365.45 344.79 332.31 350.39 352.64 336.81 369.69 387.35 380.14 Worst Net 16 333.30 372.37 357.49 312.27 392.45 377.77 365.54 368.40	% Error -0.798 -0.001 -0.011 -0.064 -0.080 0.690 0.124 -8.056 6.338 -4.003 7.675 -0.938 1.842 3.987 3.439 -8.056 % Error -0.804 -0.036 -0.002 -0.074 -0.014 0.739 0.148 -1761	Net 12 333.07 372.35 357.48 312.02 392.43 377.61 364.82 352.08 328.93 352.96 331.29 322.51 353.87 376.89 374.05 Worst Net 17 333.35 372.39 357.36 312.75 392.30 377.93 365.21 365.21	% Error -0.872 -0.040 -0.051 -0.154 -0.019 0.697 -0.048 -6.113 5.258 -3.298 1.157 -5.146 -2.516 -1.80 1.781 -6.113 % Error -0.788 -0.030 -0.038 0.079 -0.051 0.781 0.056 -2.546	Net 13 333.74 372.71 357.55 312.25 392.42 378.20 365.32 345.61 323.99 350.89 350.89 356.60 330.67 372.19 377.65 387.13 Worst Net 18 333.43 372.40 357.54 312.04 392.11 377.88 365.18 374.53	% Error -0.674 0.056 0.013 -0.080 -0.020 0.854 0.089 -7.836 3.677 -3.867 8.884 -2.745 2.532 1.384 5.342 8.884 % Error -0.765 -0.026 0.010 -0.147 -0.100 0.768 0.049 -0.125	Net 14 333.48 372.63 357.42 312.61 391.62 377.92 365.06 339.64 334.84 379.20 342.28 327.80 370.31 381.71 373.36 Worst Net 19 333.68 372.57 357.53 312.23 392.49 378.19 364.66 365.37	% Error -0.751 0.035 -0.022 0.037 -0.224 0.778 0.016 -9.428 7.149 3.890 4.512 -3.587 2.014 2.473 1.595 -9.428 % Error -0.691 0.020 0.007 -0.8850 -0.093 -2.567	Net 15 333.14 372.81 357.41 312.40 392.44 377.61 365.47 348.36 349.92 352.03 345.74 317.75 360.61 386.05 374.74 Worst Net 20 333.03 372.81 357.37 312.27 392.65 377.52 365.44 359.49	% Error -0.851 0.082 -0.024 -0.031 -0.016 0.696 0.127 -7.103 11.973 -3.553 5.568 -6.544 -0.658 3.638 1.971 11.973 % Error -0.883 0.084 -0.036 -0.075 0.039 0.673 0.120 -4.135
Training Data Test Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 312.5 365 375 312.5 365 327.5 340 363 372.5 367.5 363 372.5 367.5 312.5 365 375.5 312.5 357.5 312.5 365 375.5 312.5 357.5 312.5 365 375.5 312.5 365 375.5 312.5 365 375.5 375.5 375.5 365.5 375.5 375.5 365.5 375.5 375.5 365.5 375.5 375.5 365.5 375.5 365.5 377.5 365.5 377.5 365.5 377.5 365.5 377.5 365.5 377.5 365.5 377.5 365.5 377.5 365.5 377.5 367.5 375	Net 11 333.32 372.49 357.46 312.30 392.18 377.59 365.45 344.79 332.31 350.39 352.64 336.81 369.69 387.35 380.14 Worst Net 16 333.30 372.37 357.49 312.27 392.45 377.77 365.54 368.40 353.91	% Error -0.798 -0.001 -0.011 -0.064 -0.080 0.690 0.124 -8.056 6.338 -4.003 7.675 -0.938 1.842 3.987 3.439 -8.056 % Error -0.804 -0.036 -0.002 -0.074 -0.014 0.739 0.148 -1.761	Net 12 333.07 372.35 357.48 312.02 392.43 377.61 364.82 352.08 328.93 352.96 331.29 322.51 353.87 376.89 374.05 Worst Net 17 333.35 372.39 357.36 312.75 392.30 377.93 365.21 365.45 325.40	% Error -0.872 -0.040 -0.054 -0.154 -0.019 0.697 -0.048 -6.113 5.258 -3.298 1.157 -5.146 -2.516 1.180 1.781 -6.113 % Error -0.788 -0.030 -0.038 0.079 -0.051 0.781 0.056 -2.546 4 129	Net 13 333.74 372.71 357.55 312.25 392.42 378.20 365.32 345.61 323.99 350.89 350.89 350.89 350.89 350.60 330.67 372.19 377.65 387.13 Worst Net 18 333.43 372.40 357.54 312.04 392.11 377.88 365.18 374.53 375.33	% Error -0.674 0.056 0.013 -0.080 -0.020 0.854 0.089 -7.836 3.677 -3.867 8.884 -2.745 2.532 1.384 5.342 8.884 */ Error -0.765 -0.026 0.010 -0.1477 -0.100 0.768 0.049 -0.125 20.107	Net 14 333.48 372.63 357.42 312.61 391.62 377.92 365.06 339.64 334.84 379.20 342.28 327.80 370.31 381.71 373.36 Worst Net 19 333.68 372.57 357.53 312.23 392.49 378.19 364.66 365.37 323.97	% Error -0.751 0.035 -0.022 0.037 -0.224 0.037 -0.224 0.037 -0.224 0.778 0.016 -9.428 7.149 3.890 4.512 -3.587 2.014 2.473 1.595 -9.428 % Error -0.691 0.020 0.007 -0.088 -0.002 0.850 -0.093 -2.567 3.670	Net 15 333.14 372.81 357.41 312.40 392.44 377.61 365.47 348.36 349.92 352.03 345.74 317.75 360.61 386.05 374.74 Worst Net 20 333.03 372.81 357.37 312.27 392.65 377.52 365.44 359.49 354.06	% Error -0.851 0.082 -0.024 -0.031 -0.016 0.696 0.127 -7.103 11.973 -3.553 5.568 -6.544 -0.668 3.638 1.971 11.973 -0.883 0.084 -0.036 -0.075 0.039 0.673 0.120 -4.135 13.298
Training Data Test Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 312.5 365 327.5 340 363 372.5 367.5 367.5 375 367.5 375 327.5 357.5 327.5 327.5 365 375 375 365 375 375 365 375 375 365 375 375 365 375 375 365 375 375 375 375 375 375 375 37	Net 11 333.32 372.49 357.46 312.30 392.18 377.59 365.45 344.79 332.31 350.39 352.64 336.81 369.69 387.35 380.14 Worst Net 16 333.30 372.37 357.49 312.27 392.45 377.77 365.54 368.40 353.91 382.04	% Error -0.798 -0.001 -0.011 -0.064 -0.080 0.690 0.124 -8.056 6.338 -4.003 7.675 -0.938 1.842 3.987 3.439 -8.056 % Error -0.804 -0.036 -0.002 -0.074 -0.014 0.739 0.148 -1.761 13.251	Net 12 333.07 372.35 357.48 312.02 392.43 377.61 364.82 352.08 328.93 352.96 331.29 322.51 353.87 376.89 374.05 Worst Net 17 333.35 372.39 357.36 312.75 392.30 377.93 365.21 365.45 325.40 310.58	% Error -0.872 -0.040 -0.054 -0.154 -0.019 0.697 -0.048 -6.113 5.258 -3.298 1.157 -5.146 -2.516 1.180 1.781 -6.113 % Error -0.788 -0.030 -0.038 0.079 -0.051 0.781 0.056 -2.546 4.129	Net 13 333.74 372.71 357.55 312.25 392.42 378.20 365.32 345.61 323.99 350.89 356.60 330.67 372.19 377.65 387.13 Worst Net 18 333.43 372.40 357.54 312.04 392.11 377.88 365.18 374.53 375.33 365.14	% Error -0.674 0.056 0.013 -0.080 -0.020 0.854 0.089 -7.836 3.677 -3.867 8.884 -2.745 2.532 1.384 5.342 8.884 */* Error -0.765 -0.026 0.010 -0.147 -0.100 0.768 0.049 -0.125 20.107 0.037	Net 14 333.48 372.63 357.42 312.61 391.62 377.92 365.06 339.64 334.84 379.20 342.28 327.80 370.31 381.71 373.36 Worst Net 19 333.68 372.57 357.53 312.23 392.49 378.19 364.66 365.37 323.97 323.97	% Error -0.751 0.035 -0.022 0.037 -0.224 0.037 -0.224 0.037 -0.224 0.778 0.016 -9.428 7.149 3.890 4.512 -3.587 2.014 2.473 1.595 -9.428 % Error -0.691 0.020 0.007 -0.088 -0.002 0.850 -0.093 -2.567 3.670 -1.852	Net 15 333.14 372.81 357.41 312.40 392.44 377.61 365.47 348.36 349.92 352.03 345.74 317.75 360.61 386.05 374.74 Worst Net 20 333.03 372.81 357.37 312.27 392.65 377.52 365.44 359.49 354.06 375.52	% Error -0.851 0.082 -0.024 -0.031 -0.016 0.696 0.127 -7.103 11.973 -3.553 5.568 -6.544 -0.658 3.638 1.971 11.973 ************************************
ata Training Data Test Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 365 327.5 365 327.5 365 327.5 365 327.5 365 327.5 367.5 375.5 312.5 357.5 312.5 357.5 312.5 357.5 312.5 365 375 312.5 365 375 312.5 365 375 312.5 365 375 312.5 365 375 327.5 365 375 365 375 365 375 365 375 365 375 365 375 365 375 365 375 365 375 365 375 365 375 365 375 365 375 365 375 365 375 375 365 375 365 375 375 365 375 365 375 375 365 375 375 365 375 375 375 365 375 375 375 375 375 375 375 37	Net 11 333.32 372.49 357.46 312.30 392.18 377.59 365.45 344.79 332.31 350.39 352.64 336.81 369.69 387.35 380.14 Worst Net 16 333.30 372.37 357.49 312.27 392.45 377.77 365.54 368.40 353.91 383.04	% Error -0.798 -0.001 -0.011 -0.064 -0.080 0.690 0.124 -8.056 6.338 -4.003 7.675 -0.938 1.842 3.987 3.439 -8.056 * -0.804 -0.036 -0.002 -0.074 -0.014 0.739 0.148 -1.761 13.251 4.943	Net 12 333.07 372.35 357.48 312.02 392.43 377.61 364.82 352.08 328.93 352.96 331.29 322.51 353.87 376.89 374.05 Worst Net 17 333.35 372.39 375.36 312.75 392.30 377.93 365.21 365.45 325.40 319.58 326.75	% Error -0.872 -0.040 -0.054 -0.019 0.697 -0.048 -6.113 5.258 -3.298 1.157 -5.146 -2.516 1.180 1.781 -6.113 % Error -0.030 -0.030 -0.031 0.781 0.056 -2.546 4.129 -12.544 9.20	Net 13 333.74 372.71 357.55 312.25 392.42 378.20 365.32 345.61 323.99 350.89 356.60 330.67 372.19 377.65 387.13 Worst Net 18 333.43 372.40 357.54 312.04 392.11 377.88 365.18 374.53 375.33 365.14 358.56	% Error -0.674 0.056 0.013 -0.080 -0.020 0.854 0.089 -7.836 3.677 -3.867 -3.867 -3.867 -3.867 -3.884 -2.745 2.532 1.384 5.342 8.884 % Error -0.765 -0.026 0.010 -0.147 -0.100 0.768 0.049 -0.125 20.107 0.037 9.484	Net 14 333.48 372.63 357.42 312.61 391.62 377.92 365.06 339.64 334.84 379.20 342.28 327.80 370.31 381.71 373.36 Worst Net 19 333.68 372.57 357.53 312.23 392.49 378.19 364.66 365.37 323.97 358.24 363.77	% Error -0.751 0.035 -0.022 0.037 -0.224 0.778 0.016 -9.428 7.149 3.890 4.512 -3.587 2.014 2.473 1.595 -9.428 % Error -0.691 0.020 0.007 -0.088 -0.002 0.850 -0.093 -2.567 3.670 -1.852 11.076	Net 15 333.14 372.81 357.41 312.40 392.44 377.61 365.47 348.36 349.92 352.03 345.74 345.74 365.61 386.05 374.74 Worst Net 20 333.03 372.81 357.37 312.27 392.65 377.52 365.44 359.49 354.06 375.52 354.50	% Error -0.851 0.082 -0.024 -0.031 -0.016 0.696 0.127 -7.103 11.973 -3.553 5.568 -6.544 -0.658 3.638 1.971 11.973 % Error -0.883 0.084 -0.036 -0.075 0.039 0.673 0.120 -4.135 13.298 2.882 8.244
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Test Data Training Data Test Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 365 327.5 340 363 372.5 367.5 367.5 312.5 367.5 312.5 367.5 312.5 367.5 312.5 367.5 312.5 327.5 312.5 365 375 312.5 365 375 312.5 365 375 312.5 365 375 312.5 365 375 312.5 365 375 312.5 365 375 375 365 375 375 365 375 375 365 375 375 365 375 375 365 375 375 365 375 375 365 375 375 365 375 375 375 365 375 375 365 375 375 365 375 375 365 375 375 365 375 375 365 375 375 365 375 375 365 375 375 365 375 375 365 375 375 365 375 375 365 375 375 365 375 375 375 365 375 375 365 375 375 365 375 375 375 365 375 375 365 375 375 365 375 375 365 375 375 365 375 375 365 375 375 365 375 375 365 375 375 365 375 375 365 375 365 375 365 375 365 375 365 375 365 375 365 327,5 340 365 327,5 340 365 327,5 340 365 327,5 340 365 327,5 340 365 327,5 340 365 327,5 340 365 327,5 340 365 327,5 340 365 327,5 340 365 327,5 340 365 327,5 340 365 327,5 340 365 327,5 340 365 327,5 340 365 327,5 340 365 375 340 365 375 340 365 375 340 365 375 340 365 375 340 365 375 340 365 375 340 365 375 340 365 375 340 365 375 340 365 375 340 365 375 340 365 375 340 365 375 340 365 375 340 365 375 340 365 375 340 365 375 340 365 375 340 375 340 375 340 375 375 375 375 375 375 375 375	Net 11 333.32 372.49 357.46 312.30 392.18 377.59 365.45 344.79 332.31 350.39 352.64 336.81 369.69 387.35 380.14 Worst Net 16 333.30 372.37 357.49 312.27 392.45 377.77 365.54 368.40 353.91 383.04 371.03 333.85 364.70	% Error -0.798 -0.001 -0.011 -0.064 -0.080 0.690 0.124 -8.056 6.338 -4.003 7.675 -0.938 1.842 3.987 3.439 -8.056 * Error -0.804 -0.036 -0.002 -0.074 -0.014 0.739 0.148 -1.761 13.251 4.943 13.290 -1.810 0.469	Net 12 333.07 372.35 357.48 312.02 392.43 377.61 364.82 352.08 328.93 352.96 331.29 322.51 353.87 376.89 374.05 Worst Net 17 333.35 372.39 357.36 312.75 392.30 377.93 365.21 365.45 325.40 319.58 356.75 327.46 333.23 365.75 327.46 333.23 365.75 327.46 333.23 365.75 327.46 333.23 365.75 327.46 333.23 365.75 327.46 333.23 365.75 327.46 333.23 365.75 327.46 333.23 365.75 327.46 333.23 365.75 327.46 333.23 365.75 327.46 333.23 365.75 327.46 333.23 365.75 327.46 333.23 365.75 327.46 333.23 365.75 327.46 333.23 365.75 327.46 328.75 327.46 328.95 327.46 328.95 327.46 328.95 327.46 328.95 327.46 328.95 327.46 328.95 327.46 328.95 327.46 328.95 327.46 328.95 327.46 328.95 327.46 328.95 327.46 328.95 327.46 328.95 327.46 328.95 327.46	% Error -0.872 -0.040 -0.054 -0.154 -0.019 0.697 -0.048 -6.113 5.258 -3.298 1.157 -5.146 -2.516 1.180 1.781 -6.113 % Error -0.788 -0.030 -0.051 0.781 0.056 -2.546 4.129 -12.444 8.930 -3.687 -8.201	Net 13 333.74 372.71 357.55 312.25 392.42 378.20 365.32 345.61 323.99 350.89 350.89 356.60 330.67 372.19 377.65 387.13 Worst Net 18 333.43 372.40 357.54 312.04 392.11 377.88 365.18 374.53 375.33 365.14 358.56 335.10 354.94 325.51 355.51 355.18 374.53 375.33 365.14 358.56 335.10 356.51 355.51 355.51 355.51 355.55 355.15	% Error -0.674 0.056 0.013 -0.080 -0.020 0.854 0.089 -7.836 3.677 -3.867 8.884 -2.745 2.532 1.384 5.342 8.884 */ Error -0.765 -0.026 0.010 -0.147 -0.100 0.768 0.049 -0.125 20.107 0.037 9.484 -1.441 -2.219	Net 14 333.48 372.63 357.42 312.61 391.62 377.92 365.06 339.64 334.84 379.20 342.28 327.80 370.31 381.71 373.36 Worst Net 19 333.68 372.57 357.53 312.23 392.49 378.19 364.66 365.37 323.97 358.24 363.77 339.18 357.89	% Error -0.751 0.035 -0.022 0.037 -0.224 0.778 0.016 -9.428 7.149 3.890 4.512 -3.587 2.014 2.473 1.595 -9.428 % Error -0.691 0.020 0.007 -0.8850 -0.093 -2.567 3.670 -1.852 11.076 -0.242 -1.409	Net 15 333.14 372.81 357.41 312.40 392.44 377.61 365.47 348.36 349.92 352.03 345.74 317.75 360.61 386.05 374.74 Worst Net 20 333.03 372.81 357.37 312.27 392.65 377.52 365.44 359.49 354.06 375.52 365.44 359.49 354.06 375.52 365.44 359.49 354.06 375.52 365.44 359.49 354.06 375.52 365.44 359.49 354.06 375.52 365.45 376.52 365.45 376.52 365.45 376.52 365.52 365.52 377.52 365.45 377.52 354.50 376.52 377.52 354.50 376.52 377.52 354.50 376.52 354.50 377.52 377.52 377.52 377.52 377.52 377.52 377.52 377.52 377.52 377.52 377.52 377.52 377.52 377.52 377.52 377.52	% Error -0.851 0.082 -0.024 -0.031 -0.016 0.696 0.127 -7.103 11.973 -3.553 5.568 -6.544 -0.658 3.638 1.971 11.973 * Error -0.883 0.084 -0.036 -0.075 0.039 0.673 0.120 -4.135 13.298 2.882 8.244 -4.092 -0.679
Test Data Training Data Test Data Training Data	Actual 336 372.5 357.5 392.5 375 365 375 365 327.5 340 363 372.5 367.5 367.5 367.5 312.5 367.5 367.5 312.5 357.5 312.5 357.5 312.5 357.5 312.5 327.5 312.5 327.5 3	Net 11 333.32 372.49 357.46 312.30 392.18 377.59 365.45 344.79 332.31 350.39 352.64 336.81 369.69 387.35 380.14 Worst Net 16 333.30 372.37 357.49 312.27 392.45 377.77 365.54 366.54 368.40 353.91 383.04 371.03 333.85 364.70 377.86	% Error -0.798 -0.001 -0.011 -0.064 -0.080 0.690 0.124 -8.056 6.338 -4.003 7.675 -0.938 1.842 3.987 3.439 -8.056 *///>.036 -0.036 -0.002 -0.074 -0.014 0.739 0.148 -1.761 13.251 4.943 13.290 -1.810 0.469 1.439	Net 12 333.07 372.35 357.48 312.02 392.43 377.61 364.82 352.08 328.93 352.96 331.29 322.51 353.87 376.89 374.05 Worst Net 17 333.35 372.39 357.36 312.75 392.30 377.93 365.21 365.45 325.40 319.58 356.75 327.46 333.23 385.39	% Error -0.872 -0.040 -0.051 -0.154 -0.019 0.697 -0.048 -6.113 5.258 -3.298 1.157 -5.146 -2.516 -1.80 1.781 -6.113 % Error -0.788 -0.030 -0.038 0.079 -0.051 0.781 0.056 -2.546 4.129 -12.444 8.930 -3.687 -8.201 3.461	Net 13 333.74 372.71 357.55 312.25 392.42 378.20 365.32 345.61 323.99 350.89 350.89 356.60 330.67 372.19 377.65 387.13 Worst Net 18 333.43 372.40 357.54 312.04 392.11 377.88 365.18 374.53 375.33 365.14 358.56 335.10 354.94 355.19 365.19 365.19 365.19 365.19 365.10 354.94 365.19 365.19 365.19 365.19 365.19 365.19 365.19 365.19 365.10 354.94 365.19 365.19 365.19 365.19 365.19 365.19 365.19 365.19 365.19 365.19 365.19 365.19 365.19 365.19 365.19 375.33 365.14 358.56 335.10 354.94 365.19 365.19 365.19 365.19 365.19 365.19 365.19 375.33 375.33 365.14 356.50 356.50 356.50 356.50 357.54 377.88 377.33 365.14 358.56 356.50 356.10 354.94 355.19 355.19 355.19 355.20 356.20 356.20 357.54 375.33 365.14 358.56 356.10 356.20 357.54 375.33 365.14 357.54 357.54 375.33 365.14 358.56 356.10 356.20 357.54 357.54 375.33 365.14 358.56 356.10 356.10 356.20 357.54 357.55 357.54 357.54 357.54 357.55 357.55 357.55 357.54 357.55	% Error -0.674 0.056 0.013 -0.080 -0.020 0.854 0.089 -7.836 3.677 -3.867 8.884 -2.745 2.532 1.384 5.342 8.884 % Error -0.765 -0.026 0.010 -0.147 -0.100 0.768 0.049 -0.125 20.107 0.037 9.484 -1.441 -2.219 3.405	Net 14 333.48 372.63 357.42 312.61 391.62 377.92 365.06 339.64 334.84 379.20 342.28 327.80 370.31 381.71 373.36 Worst Net 19 333.68 372.57 357.53 312.23 392.49 378.19 364.66 365.37 323.97 358.24 363.77 323.97 358.24 363.77 339.18 357.89 383.56	% Error -0.751 0.035 -0.022 0.037 -0.224 0.778 0.016 -9.428 7.149 3.890 4.512 -3.587 2.014 2.473 1.595 -9.428 % Error -0.691 0.020 0.007 -0.088 -0.002 0.850 -0.093 -2.567 3.670 -1.852 11.076 -0.242 -1.409 2.968	Net 15 333.14 372.81 357.41 312.40 392.44 377.61 365.47 348.36 349.92 352.03 345.74 317.75 360.61 386.05 374.74 Worst Net 20 333.03 372.81 357.37 312.27 392.65 377.52 365.44 359.49 354.06 375.52 354.50 326.09 360.53 385.06	% Error -0.851 0.082 -0.024 -0.031 -0.016 0.696 0.127 -7.103 11.973 -3.553 5.568 -6.544 -0.658 3.638 1.971 11.973 % Error -0.883 0.084 -0.036 -0.075 0.039 0.673 0.120 -4.135 13.298 2.882 8.244 -4.092 -0.679 3.372
Test Data Training Data Test Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 312.5 365 327.5 365 327.5 367.5 367.5 375 367.5 375 365 375 327.5 357.5 312.5 365 375 312.5 365 375 312.5 365 375 312.5 365 375 312.5 365 375 312.5 365 375 375 365 375 375 365 375 375 365 375 375 375 375 365 375 375 375 365 375 375 375 375 375 375 365 375 375 375 365 375 375 375 365 375 375 375 365 375 375 375 365 375 375 365 375 365 375 327.5 365 375 365 375 327.5 365 327.5 327.5 365 327.	Net 11 333.32 372.49 357.46 312.30 392.18 377.59 365.45 344.79 332.31 350.39 352.64 336.81 369.69 387.35 380.14 Worst Net 16 333.30 372.37 357.49 312.27 392.45 377.77 365.54 368.40 353.91 383.04 371.03 333.85 364.70 377.86 390.61	% Error -0.798 -0.001 -0.011 -0.064 -0.080 0.690 0.124 -8.056 6.338 -4.003 7.675 -0.938 1.842 3.987 3.439 -8.056 % Error -0.804 -0.036 -0.002 -0.074 -0.014 0.739 0.148 -1.761 13.251 4.943 13.290 -1.810 0.469 1.439 6.290	Net 12 333.07 372.35 357.48 312.02 392.43 377.61 364.82 352.08 328.93 352.96 331.29 322.51 353.87 376.89 374.05 Worst Net 17 333.35 372.39 357.36 312.75 392.30 377.93 365.21 365.45 325.40 319.58 325.40 319.58 356.75 327.46 333.23 385.39 379.20	% Error -0.872 -0.040 -0.054 -0.154 -0.019 0.697 -0.048 -6.113 5.258 -3.298 1.157 -5.146 -2.516 1.180 1.781 -6.113 * 6.113 * -0.781 -0.788 -0.030 -0.051 0.781 0.056 -2.546 4.129 -12.444 8.930 -3.687 -8.201 3.461	Net 13 333.74 372.71 357.55 312.25 392.42 378.20 365.32 345.61 323.99 350.89 350.89 350.89 350.60 330.67 372.19 377.65 387.13 Worst Net 18 333.43 372.40 357.54 312.04 392.11 377.88 365.18 374.53 375.33 365.14 358.56 335.10 354.94 385.19 387.96	% Error -0.674 0.056 0.013 -0.080 -0.020 0.854 0.089 -7.836 3.677 -3.867 8.884 -2.745 2.532 1.384 5.342 8.884 */* Error -0.765 -0.026 0.010 -0.1477 -0.100 0.768 0.049 -0.125 20.107 0.037 9.484 -1.441 -2.219 3.405	Net 14 333.48 372.63 357.42 312.61 391.62 377.92 365.06 339.64 334.84 379.20 342.28 327.80 370.31 381.71 373.36 Worst Net 19 333.68 372.57 357.53 312.23 392.49 378.19 364.66 365.37 323.97 358.24 363.77 323.97 358.24 363.77 323.97 358.24 363.77 323.97 358.24 363.77 323.97 358.24 363.77 323.97 358.24 363.77 323.97 358.24 363.77 323.97 358.24 363.77 323.97 358.24 363.77 323.97 358.24 363.77 323.97 358.24 363.77 323.97 358.24 363.77 323.97 358.24 363.77 323.97 358.24 363.77 323.97 358.24 363.77 323.97 358.24 363.77 323.97 358.24 363.77 357.89 363.56 381.15 377.89 377.89 377.89 377.89 377.89 377.89 377.89 377.89 377.89 377.89 377.87 377.89 377.89 377.87 377.89 377.89 377.89 377.87 377.89 377.89 377.87 377.89 377.89 377.87 377.89 377.89 377.87 377.89 377.89 377.87 377.89 377.89 377.87 377.89 377.89 377.87 377.89 377.87 377.89 377.89 377.87 377.89 377.89 377.87 377.87 377.89 377.87 377.87 377.89 377.87 377.87 377.89 377.87 377.87 377.89 377.89 377.87 377.87 377.89 377.87 377.89 377.87 377.87 377.89 377.87 377.87 377.89 377.87 377.87 377.89 377.87 377.89 377.87 377.89 377.87 377.87 377.89 377.87 377.87 377.89 377.87 377.87 377.87 377.89 377.87	% Error -0.751 0.035 -0.022 0.037 -0.224 0.037 -0.224 0.037 -0.224 0.778 0.016 -9.428 7.149 3.890 4.512 -3.587 2.014 2.473 1.595 -9.428 % Error -0.691 0.020 0.007 -0.088 -0.002 0.850 -0.093 -2.567 3.670 -1.852 11.076 -0.242 -1.409 2.968 3.713	Net 15 333.14 372.81 357.41 312.40 392.44 377.61 365.47 348.36 349.92 352.03 345.74 317.75 360.61 386.05 374.74 Worst Net 20 333.03 372.81 357.37 312.27 392.65 377.52 365.44 359.49 354.06 375.52 365.44 359.49 354.06 375.52 365.44 359.49 354.06 375.52 365.44 359.49 354.06 375.52 365.44 359.49 354.06 375.52 365.44 359.49 354.06 375.52 365.44 359.49 354.06 375.52 365.44 359.49 354.06 375.52 354.50 326.09 360.53 385.06 376.18	% Error -0.851 0.082 -0.024 -0.031 -0.016 0.696 0.127 -7.103 11.973 -3.553 5.568 -6.544 -0.658 3.638 1.971 11.973 ************************************

	Actual	Net 21	% Error	Net 22	% Error	Net 23	% Error	Net 24	% Error	Net 25	% Error
	336	333.45	-0.760	333,21	-0.831	333.17	-0.841	333.36	-0.786	333.46	-0.755
at	372.5	372.36	-0.039	372.47	-0.007	372.54	0.012	372.25	-0-067	372.65	0.040
	357.5	357.56	0.018	357.46	-0.012	357.43	-0.019	357-66	0.046	357.53	0.010
ů,	312.5	311.88	-0.198	312.37	-0.041	312.17	-0.107	312.12	-0.120	311.97	-0.169
, C	392.5	391.92	-0.148	393.00	0.128	392.47	-0.008	392 33	-0.044	303 35	0.216
2	375	377.89	0.770	377.64	0.720	377.70	0.721	377.80	0.769	377.97	0.210
	365	364.66	-0.094	365.35	0.005	365.44	0.121	377.09	0.709	311.01	0.704
	375	330.97	11 769	303.33	0.095	303.41	0.113	305.19	0.053	305.28	0.077
	2125	330.07	-11.708	370.70	-1.148	356-26	-4,999	352.71	-5.944	353.36	-5.770
	312.5	362.43	15.977	346.14	10.764	321.34	2.829	329.13	5.322	328.47	5.111
ati	305	349.22	-4.323	339.24	-7.059	374.08	2.487	354.01	-3.010	353.21	-3.230
	327.5	361.10	10.261	369.75	12.902	339.25	3.588	332.30	1.465	330.78	1.000
es	340	334.52	-1.613	338.73	-0.373	320.60	-5.705	323.21	-4.939	322.76	-5.070
F I	363	353.53	-2.610	339.23	-6.549	339.99	-6.339	354.07	-2.459	354.86	-2.242
	372.5	378.83	1.700	384.02	3.094	385.42	3.469	377.13	1.243	377.47	1.335
	367.5	373.28	1.572	378.58	3.015	363.03	-1.216	374.26	1.840	375.72	2.237
		Worst	15,977	Worst	12,902	Worst	-6.339	Worst	-5 944	Worst	-5 770
					12.002		0.000	TIOLOL	0.011	TOTAL	0.110
	Actual	Net 26	% Error	Net 27	% Error	Net 28	% Error	Not 29	% Error	Net 30	% Error
	336	333 50	-0.718	333 48	-0.750	333 56	0.726	222.25	0.910	222.24	0.900
2	372.5	372.35	0.040	272.44	-0.730	333.30	-0.720	333.23	-0.019	333.31	-0.000
Da	257.5	357.60	-0.040	372.41	-0.024	372.45	-0.014	372.55	0.013	372.54	0.011
5	357.5	357.09	0.054	357.62	0.033	357.62	0.034	357.57	0.018	357.54	0.011
1.5	312.5	311.98	-0.167	311.98	-0.166	311.93	-0.182	311.97	-0.171	311.94	-0.178
air	392.5	392.80	0.077	392.98	0.123	393.02	0.133	393.07	0.144	392.97	0.120
ΕĒ.	375	378.07	0.818	377.93	0.782	377.99	0.797	377.76	0.736	377.77	0.738
	365	364.88	-0.032	364.93	-0.018	364.73	-0.074	365.17	0.047	365.14	0.039
	375	350.87	-6.435	353.10	-5.840	354.39	-5.496	353.01	-5.865	353.21	-5.811
	312.5	326.09	4.347	327.53	4.811	327.79	4.894	328.36	5.074	328.83	5.225
g	365	350.69	-3.921	352.22	-3.502	352.48	-3.431	353.58	-3.128	353.43	-3.169
a l	327.5	329.36	0.567	331.40	1,190	331.65	1,266	331.12	1.105	331.04	1.082
1	340	322.03	-5 286	322.68	-5.094	323 21	-4 030	322.71	-5.084	322.86	-5.041
ĕ	363	355 10	-2 151	354.02	2 2 2 2 7	356.01	1 025	354 63	2 307	354.91	2 255
<u></u>	272.5	277.17	1 252	334.92	1 226	330.01	-1.925	334.03	1 077	334.01	1 204
	372.5	377.17	1.253	377.48	1.330	377.51	1.344	377.20	1.277	377.28	1.284
	367.5	376.08	2.334	375.58	2.199	377.02	2.590	375.34	2.135	375.51	2.181
		Worst	-6.435	Worst	-5.840	Worst	-5.496	Worst	-5.865	Worst	-5.811
	Actual	Net 31	% Error	Net 32	% Error	Net 33	% Error	Net 34	% Error	Net 35	% Error
	Actual 336	Net 31 333.29	% Error -0.806	Net 32 333.30	% Error -0.804	Net 33 333.48	% Error -0.751	Net 34 333.01	% Error -0.890	Net 35 333.19	% Error -0.837
ata	Actual 336 372.5	Net 31 333.29 372.57	% Error -0.806 0.019	Net 32 333.30 372.58	% Error -0.804 0.023	Net 33 333.48 372.66	% Error -0.751 0.042	Net 34 333.01 372.60	% Error -0.890 0.026	Net 35 333.19 372.69	% Error -0.837 0.052
Data	Actual 336 372.5 357.5	Net 31 333.29 372.57 357.48	% Error -0.806 0.019 -0.004	Net 32 333.30 372.58 357.50	% Error -0.804 0.023 0.000	Net 33 333.48 372.66 357.55	% Error -0.751 0.042 0.013	Net 34 333.01 372.60 357.42	% Error -0.890 0.026 -0.022	Net 35 333.19 372.69 357.42	% Error -0.837 0.052 -0.022
ng Data	Actual 336 372.5 357.5 312.5	Net 31 333.29 372.57 357.48 311.99	% Error -0.806 0.019 -0.004 -0.164	Net 32 333.30 372.58 357.50 311.98	% Error -0.804 0.023 0.000 -0.168	Net 33 333.48 372.66 357.55 311.97	% Error -0.751 0.042 0.013 -0.171	Net 34 333.01 372.60 357.42 311.99	% Error -0.890 0.026 -0.022 -0.163	Net 35 333.19 372.69 357.42 311.98	% Error -0.837 0.052 -0.022 -0.166
ining Data	Actual 336 372.5 357.5 312.5 392.5	Net 31 333.29 372.57 357.48 311.99 392.96	% Error -0.806 0.019 -0.004 -0.164 0.117	Net 32 333.30 372.58 357.50 311.98 392.96	% Error -0.804 0.023 0.000 -0.168 0.118	Net 33 333.48 372.66 357.55 311.97 392.43	% Error -0.751 0.042 0.013 -0.171 -0.017	Net 34 333.01 372.60 357.42 311.99 392.72	% Error -0.890 0.026 -0.022 -0.163 0.056	Net 35 333.19 372.69 357.42 311.98 392.92	% Error -0.837 0.052 -0.022 -0.166 0.108
raining Data	Actual 336 372.5 357.5 312.5 392.5 375	Net 31 333.29 372.57 357.48 311.99 392.96 377.74	% Error -0.806 0.019 -0.004 -0.164 0.117 0.730	Net 32 333.30 372.58 357.50 311.98 392.96 377.77	% Error -0.804 0.023 0.000 -0.168 0.118 0.740	Net 33 333.48 372.66 357.55 311.97 392.43 377.97	% Error -0.751 0.042 0.013 -0.171 -0.017 0.792	Net 34 333.01 372.60 357.42 311.99 392.72 377.50	% Error -0.890 0.026 -0.022 -0.163 0.056 0.665	Net 35 333.19 372.69 357.42 311.98 392.92 377.67	% Error -0.837 0.052 -0.022 -0.166 0.108 0.711
Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365	Net 31 333.29 372.57 357.48 311.99 392.96 377.74 365.24	% Error -0.806 0.019 -0.004 -0.164 0.117 0.730 0.066	Net 32 333.30 372.58 357.50 311.98 392.96 377.77 365.14	% Error -0.804 0.023 0.000 -0.168 0.118 0.740 0.039	Net 33 333.48 372.66 357.55 311.97 392.43 377.97 364.90	% Error -0.751 0.042 0.013 -0.171 -0.017 0.792 -0.029	Net 34 333.01 372.60 357.42 311.99 392.72 377.50 364.95	% Error -0.890 0.026 -0.022 -0.163 0.056 0.665 -0.015	Net 35 333.19 372.69 357.42 311.98 392.92 377.67 365.19	% Error -0.837 0.052 -0.022 -0.166 0.108 0.711 0.053
Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375	Net 31 333.29 372.57 357.48 311.99 392.96 377.74 365.24 353.13	% Error -0.806 0.019 -0.004 -0.164 0.117 0.730 0.066 -5.833	Net 32 333.30 372.58 357.50 311.98 392.96 377.77 365.14 353.30	% Error -0.804 0.023 0.000 -0.168 0.118 0.740 0.039 -5.786	Net 33 333.48 372.66 357.55 311.97 392.43 377.97 364.90 353.46	% Error -0.751 0.042 0.013 -0.171 -0.017 0.792 -0.029 -5.744	Net 34 333.01 372.60 357.42 311.99 392.72 377.50 364.95 352.78	% Error -0.890 0.026 -0.022 -0.163 0.056 0.665 -0.015 -5.924	Net 35 333.19 372.69 357.42 311.98 392.92 377.67 365.19 352.90	% Error -0.837 -0.052 -0.022 -0.166 0.108 0.711 0.053 -5.894
Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 312.5 312.5	Net 31 333.29 372.57 357.48 311.99 392.96 377.74 365.24 353.13 328.88	% Error -0.806 0.019 -0.004 -0.164 0.117 0.730 0.066 -5.833 5.241	Net 32 333.30 372.58 357.50 311.98 392.96 377.77 365.14 353.30 328.82	% Error -0.804 0.023 0.000 -0.168 0.118 0.740 0.039 -5.786 5.223	Net 33 333.48 372.66 357.55 311.97 392.43 377.97 364.90 353.46 328.65	% Error -0.751 0.042 0.013 -0.171 -0.017 0.792 -0.029 -5.744 5.167	Net 34 333.01 372.60 357.42 311.99 392.72 377.50 364.95 352.78 328.40	% Error -0.890 0.026 -0.022 -0.163 0.056 0.665 -0.015 -5.924 5.088	Net 35 333.19 372.69 357.42 311.98 392.92 377.67 365.19 352.90 328.72	% Error -0.837 0.052 -0.022 -0.166 0.108 0.711 0.053 -5.894 5.189
Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 312.5 265	Net 31 333.29 372.57 357.48 311.99 392.96 377.74 365.24 353.13 328.88 252.45	% Error -0.806 0.019 -0.004 -0.164 0.117 0.730 0.066 -5.833 5.241 2.165	Net 32 333.30 372.58 357.50 311.98 392.96 377.77 365.14 353.30 328.82 262.26	% Error -0.804 0.023 0.000 -0.168 0.118 0.740 0.039 -5.786 5.223 2.100	Net 33 333.48 372.66 357.55 311.97 392.43 377.97 364.90 353.46 328.65 324.82	% Error -0.751 0.042 0.013 -0.171 -0.017 0.792 -0.029 -5.744 5.167 2.609	Net 34 333.01 372.60 357.42 311.99 392.72 377.50 364.95 352.78 328.40 253.20	% Error -0.890 0.026 -0.022 -0.163 0.056 0.665 -0.015 -5.924 5.088 2.205	Net 35 333.19 372.69 357.42 311.98 392.92 377.67 365.19 352.90 328.72 363.17	% Error -0.837 -0.052 -0.022 -0.166 0.108 0.711 0.053 -5.894 5.189 -3.242
ata Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 312.5 365 312.5 365 312.5	Net 31 333.29 372.57 357.48 311.99 392.96 377.74 365.24 353.13 328.88 353.45 320.27	% Error -0.806 0.019 -0.004 -0.164 0.117 0.730 0.066 -5.833 5.241 -3.165 0.000	Net 32 333.30 372.58 357.50 311.98 392.96 377.77 365.14 353.30 328.82 353.36	% Error -0.804 0.023 0.000 -0.168 0.118 0.740 0.039 -5.786 5.223 -3.190	Net 33 333.48 372.66 357.55 311.97 392.43 377.97 364.90 353.46 328.65 351.83 324.22	% Error -0.751 0.042 0.013 -0.171 -0.017 0.792 -0.029 -5.744 5.167 -3.608 1.465	Net 34 333.01 372.60 357.42 311.99 392.72 377.50 364.95 352.78 328.40 353.30 220.60	% Error -0.890 0.026 -0.022 -0.163 0.056 0.665 -0.015 -5.924 5.088 -3.205	Net 35 333.19 372.69 357.42 311.98 392.92 377.67 365.19 352.90 328.72 353.17 320.62	% Error -0.837 -0.052 -0.022 -0.166 0.108 0.711 0.053 -5.894 5.189 -3.242 -0.952
t Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 312.5 365 327.5 365 327.5 365	Net 31 333.29 372.57 357.48 311.99 392.96 377.74 365.24 353.13 328.88 353.45 330.77	% Error -0.806 0.019 -0.004 -0.164 0.117 0.730 0.066 -5.833 5.241 -3.165 0.998	Net 32 333.30 372.58 357.50 311.98 392.96 377.77 365.14 353.30 328.82 353.36 330.80	% Error -0.804 0.023 0.000 -0.168 0.118 0.740 0.039 -5.786 5.223 -3.190 1.007	Net 33 333.48 372.66 357.55 311.97 392.43 377.97 364.90 353.46 328.65 351.83 331.32 202.22	% Error -0.751 0.042 0.013 -0.171 -0.017 0.792 -0.029 -5.744 5.167 -3.608 1.165	Net 34 333.01 372.60 357.42 311.99 392.72 377.50 364.95 352.78 328.40 353.30 330.69 330.69	% Error -0.890 0.026 -0.163 0.056 0.665 -0.015 -5.924 5.088 -3.205 0.975	Net 35 333.19 372.69 357.42 311.98 392.92 377.67 365.19 352.90 328.72 353.17 330.62	% Error -0.837 0.052 -0.022 -0.166 0.108 0.711 0.053 -5.894 5.189 -3.242 0.952
est Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 312.5 365 327.5 340	Net 31 333.29 372.57 357.48 311.99 392.96 377.74 365.24 353.13 328.88 353.45 330.77 322.77	% Error -0.806 0.019 -0.004 -0.164 0.117 0.730 0.066 -5.833 5.241 -3.165 0.998 -5.068	Net 32 333.30 372.58 357.50 311.98 392.96 377.77 365.14 353.30 328.82 353.36 330.80 322.82	% Error -0.804 0.023 0.000 -0.168 0.118 0.740 0.039 -5.786 5.223 -3.190 1.007 -5.054	Net 33 333.48 372.66 357.55 311.97 392.43 377.97 364.90 353.46 328.65 351.83 331.32 322.83	% Error -0.751 0.042 0.013 -0.171 -0.017 0.792 -0.029 -5.744 5.167 -3.608 1.165 -5.049 -0.029	Net 34 333.01 372.60 357.42 311.99 392.72 377.50 364.95 352.78 328.40 353.30 330.69 322.55	% Error -0.890 0.026 -0.022 -0.163 0.056 0.665 -0.015 -5.924 5.088 -3.205 0.975 -5.134	Net 35 333.19 372.69 357.42 311.98 392.92 377.67 365.19 352.90 328.72 353.17 330.62 322.58	% Error -0.837 -0.052 -0.022 -0.166 0.108 0.711 0.053 -5.894 5.189 -3.242 0.952 -5.124 -2.024
Test Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 312.5 365 327.5 340 363	Net 31 333.29 372.57 357.48 311.99 392.96 377.74 365.24 353.13 328.88 353.45 330.77 322.77 354.67	% Error -0.806 0.019 -0.004 -0.164 0.117 0.730 0.066 -5.833 5.241 -3.165 0.998 -5.068 -2.294	Net 32 333.30 372.58 357.50 311.98 392.96 377.77 365.14 353.30 328.82 353.36 330.80 322.82 354.82	% Error -0.804 0.023 0.000 -0.168 0.118 0.740 0.039 -5.786 5.223 -3.190 1.007 -5.054 -2.254	Net 33 333.48 372.66 357.55 311.97 392.43 377.97 364.90 353.46 328.65 351.83 331.32 322.83 354.69	% Error -0.751 0.042 0.013 -0.171 -0.017 0.792 -0.029 -5.744 5.167 -3.608 1.165 -5.049 -2.288	Net 34 333.01 372.60 357.42 311.99 392.72 377.50 364.95 352.78 328.40 353.30 330.69 322.55 354.18	% Error -0.890 0.026 -0.163 0.056 0.665 -0.015 -5.924 5.088 -3.205 0.975 -5.134 -2.430	Net 35 333.19 372.69 357.42 311.98 392.92 377.67 365.19 352.90 328.72 353.17 330.62 322.58 354.54	% Error -0.837 0.052 -0.022 -0.166 0.108 0.711 0.053 -5.894 5.189 -3.242 0.952 -5.124 -2.331 -2.331
Test Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 312.5 365 327.5 340 363 372.5	Net 31 333.29 372.57 357.48 311.99 392.96 377.74 365.24 353.13 328.88 353.45 330.77 322.77 354.67 377.34	% Error -0.806 0.019 -0.004 -0.164 0.117 0.730 0.066 -5.833 5.241 -3.165 0.998 -5.068 -2.294 1.299	Net 32 333.30 372.58 357.50 311.98 392.96 377.77 365.14 353.30 328.82 353.36 330.80 322.82 354.82 354.82 377.35	% Error -0.804 0.023 0.000 -0.168 0.118 0.740 0.039 -5.786 5.223 -3.190 1.007 -5.054 -2.254 1.301	Net 33 333.48 372.66 357.55 311.97 392.43 377.97 364.90 353.46 328.65 351.83 331.32 322.83 354.69 377.49	% Error -0.751 0.042 0.013 -0.171 -0.017 0.792 -0.029 -5.744 5.167 -3.608 1.165 -5.049 -2.288 1.340	Net 34 333.01 372.60 357.42 311.99 392.72 377.50 364.95 352.78 328.40 353.30 330.69 322.55 354.18 377.26	% Error -0.890 0.026 -0.163 0.056 0.665 -0.015 -5.924 5.088 -3.205 0.975 -5.134 -2.430 1.279	Net 35 333.19 372.69 357.42 311.98 392.92 377.67 365.19 352.90 328.72 353.17 330.62 322.58 354.54 377.35	% Error -0.837 0.052 -0.022 -0.166 0.108 0.711 0.053 -5.894 5.189 -3.242 0.952 -5.124 -2.331 1.302
Test Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 312.5 365 327.5 365 327.5 340 363 372.5 367.5	Net 31 333.29 372.57 357.48 311.99 392.96 377.74 365.24 353.13 328.88 353.45 330.77 322.77 354.67 377.34 375.48	% Error -0.806 0.019 -0.004 -0.164 0.117 0.730 0.066 -5.833 5.241 -3.165 0.998 -5.068 -2.294 1.299 2.171	Net 32 333.30 372.58 357.50 311.98 392.96 377.77 365.14 353.30 328.82 353.36 330.80 322.82 354.82 377.35	% Error -0.804 0.023 0.000 -0.168 0.118 0.740 0.039 -5.786 5.223 -3.190 1.007 -5.054 -2.254 1.301 2.225	Net 33 333.48 372.66 357.55 311.97 392.43 377.97 364.90 353.46 328.65 351.83 331.32 322.83 354.69 377.49 375.01	% Error -0.751 0.042 0.013 -0.171 -0.017 0.792 -0.029 -5.744 5.167 -3.608 1.165 -5.049 -2.288 1.340 2.042	Net 34 333.01 372.60 357.42 311.99 392.72 377.50 364.95 352.78 328.40 353.30 330.69 322.55 354.18 377.26 374.66	% Error -0.890 0.026 -0.022 -0.163 0.056 0.665 -0.015 -5.924 5.088 -3.205 0.975 -5.134 -2.430 1.279 1.948	Net 35 333.19 372.69 357.42 311.98 392.92 377.67 365.19 352.90 328.72 353.17 330.62 322.58 354.54 377.35 375.16	% Error -0.837 0.052 -0.022 -0.166 0.108 0.711 0.053 -5.894 5.189 -3.242 0.952 -5.124 -2.331 1.302 2.085
Test Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 312.5 365 327.5 340 363 372.5 367.5 367.5	Net 31 333.29 372.57 357.48 311.99 392.96 377.74 365.24 353.13 328.88 353.45 330.77 322.77 354.67 377.34 375.48 Worst	% Error -0.806 0.019 -0.004 -0.164 0.117 0.730 0.066 -5.833 5.241 -3.165 0.998 -5.068 -2.294 1.299 2.171 -5.833	Net 32 333.30 372.58 357.50 311.98 392.96 377.77 365.14 353.30 328.82 353.36 330.80 322.82 354.82 354.82 377.35 375.68 Worst	% Error -0.804 0.023 0.000 -0.168 0.118 0.740 0.039 -5.786 5.223 -3.190 1.007 -5.054 -2.254 1.301 2.225 -5.786	Net 33 333.48 372.66 357.55 311.97 392.43 377.97 364.90 353.46 328.65 351.83 331.32 322.83 354.69 377.49 375.01 Worst	% Error -0.751 0.042 0.013 -0.171 -0.017 0.792 -0.029 -5.744 5.167 -3.608 1.165 -5.049 -2.288 1.340 2.042 -5.744	Net 34 333.01 372.60 357.42 311.99 392.72 377.50 364.95 352.78 328.40 353.30 330.69 322.55 354.18 377.26 374.66 Worst	% Error -0.890 0.026 -0.022 -0.163 0.056 0.665 -0.015 -5.924 5.088 -3.205 0.975 -5.134 -2.430 1.279 1.948 -5.924	Net 35 333.19 372.69 357.42 311.98 392.92 377.67 365.19 352.90 328.72 353.17 330.62 322.58 354.54 377.35 375.16 Worst	% Error -0.837 0.052 -0.022 -0.166 0.108 0.711 0.053 -5.894 5.189 -3.242 0.952 -5.124 -2.331 1.302 2.085 -5.894
Test Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 312.5 365 327.5 340 363 372.5 367.5	Net 31 333.29 372.57 357.48 311.99 392.96 377.74 365.24 353.13 328.88 353.45 330.77 322.77 354.67 377.34 375.48 Worst	% Error -0.806 0.019 -0.004 -0.164 0.117 0.730 0.066 -5.833 5.241 -3.165 0.998 -5.068 -2.294 1.299 2.171 -5.833	Net 32 333.30 372.58 357.50 311.98 392.96 377.77 365.14 353.30 328.82 353.36 330.80 322.82 353.36 330.80 322.82 354.82 377.35 375.68 Worst	% Error -0.804 0.023 0.000 -0.168 0.118 0.740 0.039 -5.786 5.223 -3.190 1.007 -5.054 -2.254 1.301 2.225 -5.786	Net 33 333.48 372.66 357.55 311.97 392.43 377.97 364.90 353.46 328.65 351.83 331.32 322.83 354.69 377.49 375.01 Worst	% Error -0.751 0.042 0.013 -0.171 -0.017 0.792 -0.029 -5.744 5.167 -3.608 1.165 -5.049 -2.288 1.340 2.042 -5.744	Net 34 333.01 372.60 357.42 311.99 392.72 377.50 364.95 352.78 328.40 353.30 330.69 322.55 354.18 377.26 374.66 Worst	% Error -0.890 0.026 -0.022 -0.163 0.056 0.665 -0.015 -5.924 5.088 -3.205 0.975 -5.134 -2.430 1.279 1.948 -5.924	Net 35 333.19 372.69 357.42 311.98 392.92 377.67 365.19 352.90 328.72 353.17 330.62 322.58 354.54 377.35 375.16 Worst	% Error -0.837 -0.052 -0.022 -0.166 0.108 0.711 0.053 -5.894 5.189 -3.242 0.952 -5.124 -2.331 1.302 2.085 -5.894
Test Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 327.5 340 363 372.5 367.5 367.5 367.5	Net 31 333.29 372.57 357.48 311.99 392.96 377.74 365.24 353.13 328.88 353.45 330.77 322.77 354.67 377.34 375.48 Worst Net 36	% Error -0.806 0.019 -0.004 -0.164 0.117 0.730 0.066 -5.833 5.241 -3.165 0.998 -5.068 -2.294 1.299 2.171 -5.833	Net 32 333.30 372.58 357.50 311.98 392.96 377.77 365.14 353.30 328.82 353.36 330.80 322.82 353.36 330.80 322.82 354.82 377.35 375.68 Worst	% Error -0.804 0.023 0.000 -0.168 0.118 0.740 0.039 -5.786 5.223 -3.190 1.007 -5.054 -2.254 1.301 2.225 -5.786	Net 33 333.48 372.66 357.55 311.97 392.43 377.97 364.90 353.46 328.65 351.83 331.32 322.83 354.69 377.49 375.01 Worst Net 38	% Error -0.751 0.042 0.013 -0.171 -0.017 0.792 -0.029 -5.744 5.167 -3.608 1.165 -5.049 -2.288 1.340 2.042 -5.744 % Error	Net 34 333.01 372.60 357.42 311.99 392.72 377.50 364.95 352.78 328.40 353.30 353.30 330.69 322.55 354.18 377.26 374.66 Worst Net 39	% Error -0.890 0.026 -0.063 0.056 0.665 -0.015 -5.924 5.088 -3.205 0.975 -5.134 -2.430 1.279 1.948 -5.924	Net 35 333.19 372.69 357.42 311.98 392.92 377.67 365.19 352.90 328.72 353.17 330.62 322.58 354.54 375.16 Worst Net 40	% Error -0.837 0.052 -0.022 -0.166 0.108 0.711 0.053 -5.894 5.189 -3.242 0.952 -5.124 -2.331 1.302 2.085 -5.894
Test Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 365 327.5 340 363 372.5 363 372.5 365 327.5 340 363 372.5 363 372.5 363 375 340 363 372.5 363 375 363 375 363 375 365 327.5 327.5 365 327.5 327.5 365 327.5 327.5 365 327.5 327.5 365 327.5 327.5 365 327.5 365 327.5 327.5 365 327.5 327.5 365 327.5	Net 31 333.29 372.57 357.48 311.99 392.96 377.74 365.24 353.13 328.88 353.45 330.77 322.77 354.67 377.34 377.34 375.48 Worst Net 36 333.21	% Error -0.806 0.019 -0.004 -0.164 0.117 0.730 0.066 -5.833 5.241 -3.165 0.998 -5.068 -2.294 1.299 2.171 -5.833	Net 32 333.30 372.58 357.50 311.98 392.96 377.77 365.14 353.30 328.82 353.36 330.80 322.82 354.82 377.35 375.68 Worst Net 37 333.28	% Error -0.804 0.023 0.000 -0.168 0.118 0.740 0.039 -5.786 5.223 -3.190 1.007 -5.054 -2.254 1.301 2.225 -5.786 % Error -0.810	Net 33 333.48 372.66 357.55 311.97 392.43 377.97 364.90 353.46 328.65 351.83 331.32 322.83 354.69 375.01 Worst Net 38 333.35	% Error -0.751 0.042 0.013 -0.171 -0.029 -5.744 5.167 -3.608 1.165 -5.049 -2.288 1.340 2.042 -5.744	Net 34 333.01 372.60 357.42 311.99 392.72 377.50 364.95 352.78 328.40 353.30 330.69 322.55 354.18 377.26 374.66 Worst Net 39 333.41	% Error -0.890 0.026 -0.022 -0.163 0.056 0.665 -0.015 -5.924 5.088 -3.205 0.975 -5.134 -2.430 1.279 1.948 -5.924	Net 35 333.19 372.69 357.42 311.98 392.92 377.67 365.19 352.90 328.72 353.17 330.62 324.54 377.35 375.16 Worst Net 40 333.32	% Error -0.837 -0.052 -0.022 -0.166 0.108 0.711 0.053 -5.894 5.189 -3.242 0.952 -5.124 -2.331 1.302 2.085 -5.894
ta Training Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 365 327.5 365 327.5 363 372.5 367.5 367.5 367.5 366 372.5 363 372.5 363 372.5 365 327.5 365 375 365 327.5 365 375 365 375 375 365 327.5 365 375 375 365 375 375 375 365 375 375 365 375 375 365 375 375 365 375 365 375 375 365 375 365 375 365 375 365 375 365 375 365 375 365 375 365 375 365 375 365 375 365 375 365 375 365 375 365 375 365 375 365 375 365 375 367 5 367 5 367 5 375 375 375 375 375 375 375	Net 31 333.29 372.57 357.48 311.99 392.96 377.74 365.24 353.13 328.88 353.45 330.77 322.77 354.67 377.34 375.48 Worst Net 36 333.21 372.84	% Error -0.806 0.019 -0.004 -0.164 0.117 0.730 0.066 -5.833 5.241 -3.165 0.998 -5.068 -2.294 1.299 2.171 -5.833 % Error -0.831 0.091	Net 32 333.30 372.58 357.50 311.98 392.96 377.77 365.14 353.30 328.82 353.36 330.80 322.82 354.82 377.35 375.68 Worst Net 37 333.28 372.41	% Error -0.804 0.023 0.000 -0.168 0.118 0.740 0.039 -5.786 5.223 -3.190 1.007 -5.054 -2.254 1.301 2.225 -5.786 % Error -0.810 -0.024	Net 33 333.48 372.66 357.55 311.97 392.43 377.97 364.90 353.46 328.65 351.83 331.32 322.83 354.69 377.49 375.01 Worst Net 38 333.35 372.36	% Error -0.751 0.042 0.013 -0.171 -0.029 -5.744 5.167 -3.608 1.165 -5.049 -2.288 1.340 2.042 -5.744	Net 34 333.01 372.60 357.42 311.99 392.72 377.50 364.95 352.78 328.40 353.30 330.69 322.55 354.18 377.26 374.66 Worst Net 39 333.41 372.42	% Error -0.890 0.026 -0.163 0.056 0.665 -0.015 -5.924 5.088 -3.205 0.975 -5.134 -2.430 1.279 1.948 -5.924	Net 35 333.19 372.69 357.42 311.98 392.92 377.67 365.19 352.90 328.72 353.17 330.62 322.58 354.54 377.35 375.16 Worst Net 40 333.32 372.29	% Error -0.837 0.052 -0.022 -0.166 0.108 0.711 0.053 -5.894 5.189 -3.242 0.952 -5.124 -2.331 1.302 2.085 -5.894
Data Test Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 312.5 365 375 312.5 365 327.5 340 363 372.5 367.5 367.5 Actual 336 372.5 357.5	Net 31 333.29 372.57 357.48 311.99 392.96 377.74 365.24 353.13 328.88 353.45 330.77 322.77 354.67 377.34 375.48 Worst Net 36 333.21 372.84 357.39	% Error -0.806 0.019 -0.004 -0.164 0.117 0.730 0.066 -5.833 5.241 -3.165 0.998 -5.068 -2.294 1.299 2.171 -5.833 % Error -0.831 -0.031	Net 32 333.30 372.58 357.50 311.98 392.96 377.77 365.14 353.30 328.82 353.36 330.80 322.82 354.82 377.35 375.68 Worst Net 37 333.28 372.41 357.55	% Error -0.804 0.023 0.000 -0.168 0.118 0.740 0.039 -5.786 5.223 -3.190 1.007 -5.054 -2.254 1.301 2.225 -5.786 % Error -0.810 -0.024 0.013	Net 33 333.48 372.66 357.55 311.97 392.43 377.97 364.90 353.46 328.65 351.83 354.69 377.49 375.01 Worst Net 38 333.35 372.36 357.58	% Error -0.751 0.042 0.013 -0.171 -0.029 -5.744 5.167 -3.608 1.165 -5.049 -2.288 1.340 2.042 -5.744 % Error -0.790 -0.790	Net 34 333.01 372.60 357.42 311.99 392.72 377.50 364.95 352.78 328.40 353.30 330.69 322.55 354.18 377.26 374.66 Worst Net 39 333.41 372.42 357.60	% Error -0.890 0.026 -0.022 -0.163 0.056 0.665 -0.015 -5.924 5.088 -3.205 -3.205 0.975 -5.134 -2.430 1.279 1.948 -5.924	Net 35 333.19 372.69 357.42 311.98 392.92 377.67 365.19 352.90 328.72 353.17 330.62 322.58 354.54 377.35 375.16 Worst Net 40 333.32 372.29 357.54	% Error -0.837 -0.052 -0.022 -0.166 0.108 0.711 0.053 -5.894 5.189 -3.242 0.952 -5.124 -2.331 1.302 2.085 -5.894 % Error -0.797 -0.056 0.010
ig Data Trainling Data Trainling Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 312.5 365 327.5 365 327.5 365 327.5 365 327.5 365 327.5 365 327.5 365 375 365 327.5 365 375 365 327.5 365 327.5 365 375 365 327.5 365 375 365 327.5 327.5 365 327.5	Net 31 333.29 372.57 357.48 311.99 392.96 377.74 365.24 353.13 328.88 353.45 330.77 322.77 354.67 377.34 375.48 Worst Net 36 333.21 372.84 357.39 311.94	% Error -0.806 0.019 -0.004 -0.164 0.117 0.730 0.066 -5.833 5.241 -3.165 0.998 -5.068 -2.294 1.299 2.171 -5.833 % Error -0.831 0.091 0.0031 -0.031 -0.179	Net 32 333.30 372.58 357.50 311.98 392.96 377.77 365.14 353.30 328.82 353.36 330.80 322.82 354.82 377.35 375.68 Worst Net 37 333.28 372.41 357.55 311.99	% Error -0.804 0.023 0.000 -0.168 0.118 0.740 0.039 -5.786 5.223 -3.190 1.007 -5.054 -2.254 1.301 2.225 -5.786 % Error -0.810 -0.024 0.013 -0.163	Net 33 333.48 372.66 357.55 311.97 392.43 377.97 364.90 353.46 328.65 351.83 331.32 322.83 354.69 377.49 375.01 Worst Net 38 333.35 372.36 357.58 312.06	% Error -0.751 0.042 0.013 -0.171 -0.017 0.792 -0.029 -5.744 5.167 -3.608 1.165 -5.049 -2.288 1.340 2.042 -5.744 % Error -0.790 -0.036 0.021 -0.041	Net 34 333.01 372.60 357.42 311.99 392.72 377.50 364.95 352.78 328.40 353.30 330.69 322.55 354.18 377.26 374.66 Worst Net 39 333.41 372.42 357.60 312.00	% Error -0.890 0.026 -0.022 -0.163 0.056 0.665 -0.015 -5.924 5.088 -3.205 0.975 -5.134 -2.430 1.279 1.948 -5.924 % Error -0.771 -0.022 0.028 -0.159	Net 35 333.19 372.69 357.42 311.98 392.92 377.67 365.19 352.90 328.72 353.17 330.62 322.58 354.54 377.35 375.16 Worst Net 40 333.32 372.29 357.54 312.05	% Error -0.837 -0.052 -0.022 -0.166 0.108 0.711 0.053 -5.894 5.189 -3.242 0.952 -5.124 -2.331 1.302 2.085 -5.894
ning Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 312.5 365 327.5 365 327.5 365 327.5 365 327.5 365 327.5 365 327.5 365 327.5 365 327.5 365 327.5 365 327.5 365 327.5 365 327.5	Net 31 333.29 372.57 357.48 311.99 392.96 377.74 365.24 353.13 328.88 353.45 330.77 322.77 354.67 377.34 375.48 Worst Net 36 333.21 372.84 357.39 311.94	% Error -0.806 0.019 -0.004 -0.164 0.117 0.730 0.066 -5.833 5.241 -3.165 0.998 -5.068 -2.294 1.299 2.171 -5.833 % Error -0.831 0.091 -0.031 -0.179 0.100	Net 32 333.30 372.58 357.50 311.98 392.96 377.77 365.14 353.30 328.82 353.36 330.80 322.82 354.82 377.35 375.68 Worst Net 37 333.28 372.41 357.55 311.99 392.73	% Error -0.804 0.023 0.000 -0.168 0.118 0.740 0.039 -5.786 5.223 -3.190 1.007 -5.054 -2.254 1.301 2.225 -5.786 % Error -0.810 -0.024 0.013 -0.163 0.058	Net 33 333.48 372.66 357.55 311.97 392.43 377.97 364.90 353.46 328.65 351.83 331.32 322.83 354.69 377.49 375.01 Worst Net 38 333.35 372.36 357.58 312.06	% Error -0.751 0.042 0.013 -0.171 -0.017 0.792 -0.029 -5.744 5.167 -3.608 1.165 -5.049 -2.288 1.340 2.042 -5.744 % Error -0.790 -0.036 0.021 -0.141 0.028	Net 34 333.01 372.60 357.42 311.99 392.72 377.50 364.95 352.78 328.40 353.30 330.69 322.55 354.18 377.26 374.66 Worst Net 39 333.41 372.42 357.60 312.00 392.72	% Error -0.890 0.026 -0.022 -0.163 0.056 0.665 -0.015 -5.924 5.088 -3.205 0.975 -5.134 -2.430 1.279 1.948 -5.924 *5.924	Net 35 333.19 372.69 357.42 311.98 392.92 377.67 365.19 352.90 328.72 353.17 330.62 322.58 354.54 377.35 375.16 Worst Net 40 333.32 372.29 357.54 312.05 392.41	% Error -0.837 -0.052 -0.022 -0.166 0.108 0.711 0.053 -5.894 5.189 -3.242 0.952 -5.124 -2.331 1.302 2.085 -5.894 * Frror -0.797 -0.056 0.010 -0.143 -0.022
aining Data Test Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 312.5 365 327.5 340 363 372.5 367.5 367.5 367.5 367.5 375 327.5 365 372.5 365 372.5 365 372.5 365 372.5 365 372.5 365 375 375 375 375 375 327.	Net 31 333.29 372.57 357.48 311.99 392.96 377.74 365.24 353.13 328.88 353.45 330.77 322.77 324.67 377.34 375.48 Worst Net 36 333.21 372.84 357.39 311.94 392.89	% Error -0.806 0.019 -0.004 -0.164 0.117 0.730 0.066 -5.833 5.241 -3.165 0.998 -5.068 -2.294 1.299 2.171 -5.833 % Error -0.831 0.091 -0.031 -0.179 0.100	Net 32 333.30 372.58 357.50 311.98 392.96 377.77 365.14 353.30 328.82 353.36 330.80 322.82 354.82 377.35 375.68 Worst Net 37 333.28 372.41 357.55 311.99 392.73 4	% Error -0.804 0.023 0.000 -0.168 0.118 0.740 0.039 -5.786 5.223 -3.190 1.007 -5.054 -2.254 1.301 2.225 -5.786 % Error -0.810 -0.024 0.013 -0.163 0.750	Net 33 333.48 372.66 357.55 311.97 392.43 377.97 364.90 353.46 328.65 351.83 331.32 322.83 354.69 377.49 375.01 Worst Net 38 333.35 372.36 357.58 312.06 392.61 377.90	% Error -0.751 0.042 0.013 -0.171 -0.029 -5.744 5.167 -3.608 1.165 -5.049 -2.288 1.340 2.042 -5.744	Net 34 333.01 372.60 357.42 311.99 392.72 377.50 364.95 352.78 328.40 353.30 330.69 322.55 354.18 377.26 374.66 Worst Net 39 333.41 372.42 357.60 312.00 312.00 392.72 377.93	% Error -0.890 0.026 -0.063 0.056 0.665 -0.015 -5.924 5.088 -3.205 0.975 -5.134 -2.430 1.279 1.948 -5.924 .0.975 0.975 0.975 0.975 0.975 0.1279 1.948 -5.924 % Error -0.771 -0.022 0.028 -0.159 0.057 0.780	Net 35 333.19 372.69 357.42 311.98 392.92 377.67 365.19 352.90 328.72 353.17 330.62 322.58 354.54 377.35 375.16 Worst Net 40 333.32 372.29 357.54 312.05 392.41 377.84	% Error -0.837 -0.052 -0.166 0.108 0.711 0.053 -5.894 5.189 -3.242 0.952 -5.124 -2.331 1.302 2.085 -5.894
Training Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 365 327.5 365 327.5 340 363 372.5 367.5 367.5 367.5 327.5 367.5 367.5 327.5 367.5 367.5 367.5 367.5 375 365 327.5 365 327.5 365 327.5 365 327.5 365 327.5 365 327.5 365 327.5 327.5 365 327.5 327.5 365 327.5 327.5 365 327.5 327.5 365 327.5 327.5 365 375 365 375 365 375 365 375 365 375 365 375 365 375 365 375 365 375 365 375 365 375 365 375 365 375 365 375 375 375 375 375 375 375 37	Net 31 333.29 372.57 357.48 311.99 392.96 377.74 365.24 353.13 328.88 353.45 330.77 322.77 322.77 354.67 377.34 375.48 Worst Net 36 333.21 372.84 357.39 311.94 392.89 377.71	% Error -0.806 0.019 -0.004 -0.164 0.117 0.730 0.066 -5.833 5.241 -3.165 0.998 -5.068 -2.294 1.299 2.171 -5.833 % Error -0.831 0.091 -0.031 -0.179 0.100	Net 32 333.30 372.58 357.50 311.98 392.96 377.77 365.14 353.30 328.82 353.36 330.80 322.82 353.36 330.80 322.82 353.36 330.80 322.82 377.35 375.68 Worst Net 37 333.28 372.41 357.55 311.99 392.73 377.81 365.42 375.83 372.41 357.55 311.99 392.73 377.81 365.42 375.84 375.55 375.68 375.55 375.68 375.55 375.68 375.55 375.68 377.75 377.81 377.81	% Error -0.804 0.023 0.000 -0.168 0.118 0.740 0.039 -5.786 5.223 -3.190 1.007 -5.054 -2.254 1.301 2.225 -5.786 % Error -0.810 -0.024 0.013 -0.163 0.750 0.046	Net 33 333.48 372.66 357.55 311.97 392.43 377.97 364.90 353.46 328.65 351.83 331.32 322.83 354.69 377.49 375.01 Worst Net 38 333.35 372.36 357.58 312.06 392.61 377.90	% Error -0.751 0.042 0.013 -0.171 -0.029 -5.744 5.167 -3.608 1.165 -5.049 -2.288 1.340 2.042 -5.744 .0017 0.021 -0.790 -0.036 0.021 -0.141 0.028 0.773 0.031	Net 34 333.01 372.60 357.42 311.99 392.72 377.50 364.95 352.78 328.40 353.30 330.69 322.55 354.18 377.26 374.66 Worst Net 39 333.41 372.42 357.60 312.00 392.72 377.93 365.10	% Error -0.890 0.026 -0.063 0.056 0.665 -0.015 -5.924 5.088 -3.205 0.975 -5.134 -2.430 1.279 1.948 -5.924 .0075 0.975 0.0771 -0.022 0.028 -0.159 0.057 0.780 0.026	Net 35 333.19 372.69 357.42 311.98 392.92 377.67 365.19 352.90 328.72 353.17 330.62 322.58 354.54 375.16 Worst Net 40 333.32 372.29 357.54 312.05 392.41 377.84 364.71	% Error -0.837 -0.052 -0.166 0.108 0.711 0.053 -5.894 5.189 -3.242 0.952 -5.124 -2.331 1.302 2.085 -5.894 * Error -0.797 -0.056 0.010 -0.143 -0.022 0.757 -0.078
Training Data Test Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 365 327.5 340 363 372.5 367.5 367.5 375.5 312.5 367.5 327.5 327.5 365 375.5 327.5 365 375.5 327.5 365 375.5 327.5 365 375.5 327.5 365 375.	Net 31 333.29 372.57 357.48 311.99 392.96 377.74 365.24 353.13 328.88 353.45 330.77 322.77 354.67 377.34 375.48 Worst Net 36 333.21 372.84 357.39 311.94 392.89 377.71 365.14 95.75.15 95.75.15.15 95.75.15.15.15 95.75.15.15.15.15.15.15.15.15.15.15.15	% Error -0.806 0.019 -0.004 -0.164 0.117 0.730 0.066 -5.833 5.241 -3.165 0.998 -5.068 -2.294 1.299 2.171 -5.833 % Error -0.831 0.091 -0.031 -0.179 0.100 0.722 0.040	Net 32 333.30 372.58 357.50 311.98 392.96 377.77 365.14 353.30 328.82 353.36 330.80 322.82 354.82 377.35 375.68 Worst Net 37 333.28 372.41 357.55 311.99 392.73 377.81 365.17	% Error -0.804 0.023 0.000 -0.168 0.118 0.740 0.039 -5.786 5.223 -3.190 1.007 -5.054 -2.254 1.301 2.225 -5.786 % Error -0.810 -0.024 0.013 -0.163 0.058 0.750 0.046	Net 33 333.48 372.66 357.55 311.97 392.43 377.97 364.90 353.46 328.65 351.83 331.32 322.83 354.69 377.49 375.01 Worst Net 38 333.35 372.36 357.58 312.06 392.61 377.90 365.11 264.225	% Error -0.751 0.042 0.013 -0.171 -0.029 -5.744 5.167 -3.608 1.165 -5.049 -2.288 1.340 2.042 -5.744 % Error -0.790 -0.036 0.021 -0.141 0.028 0.773 0.031	Net 34 333.01 372.60 357.42 311.99 392.72 377.50 364.95 352.78 328.40 353.30 330.69 322.55 354.18 377.26 374.66 Worst Net 39 333.41 372.42 357.60 312.00 392.72 377.93 365.10	% Error -0.890 0.026 -0.022 -0.163 0.056 0.665 -0.015 -5.924 5.088 -3.205 -3.205 0.975 -5.134 -2.430 1.279 1.948 -5.924	Net 35 333.19 372.69 357.42 311.98 392.92 377.67 365.19 352.90 328.72 353.17 330.62 322.58 354.54 377.35 375.16 Worst Net 40 333.32 372.29 357.54 312.05 392.41 377.84 364.71 350.62	% Error -0.837 -0.052 -0.022 -0.166 0.108 0.711 0.053 -5.894 5.189 -3.242 0.952 -5.124 -2.331 1.302 2.085 -5.894 *5.894 *0.797 -0.056 0.010 -0.143 -0.022 0.757 -0.078 -6.409
Training Data Test Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 312.5 365 327.5 340 363 372.5 367.5 367.5 375.5 312.5 367.5 312.5 327.5 327.5 365 375.5 375.5 312.5 365 375.5 375.5 312.5 365 375.5 375.5 365.5 375.5	Net 31 333.29 372.57 357.48 311.99 392.96 377.74 365.24 353.13 328.88 353.45 330.77 322.77 354.67 377.34 375.48 Worst Net 36 333.21 372.84 357.39 311.94 392.89 377.71 365.14 352.94	% Error -0.806 0.019 -0.004 -0.164 0.117 0.730 0.066 -5.833 5.241 -3.165 0.998 -5.068 -2.294 1.299 2.171 -5.833 % Error -0.831 -0.091 -0.031 -0.179 0.100 0.722 0.040 -5.882	Net 32 333.30 372.58 357.50 311.98 392.96 377.77 365.14 353.30 328.82 353.36 330.80 322.82 354.82 377.35 375.68 Worst Net 37 333.28 372.41 357.55 311.99 392.73 377.81 365.17 365.17 351.59	% Error -0.804 0.023 0.000 -0.168 0.118 0.740 0.039 -5.786 5.223 -3.190 1.007 -5.054 -2.254 1.301 2.225 -5.786 % Error -0.810 -0.024 0.013 -0.163 0.058 0.750 0.046 -6.243	Net 33 333.48 372.66 357.55 311.97 392.43 377.97 364.90 353.46 328.65 351.83 331.32 322.83 354.69 377.49 375.01 Worst Net 38 333.35 372.36 357.58 312.06 392.61 377.90 365.11 351.35 322.52 322.52 325.58 312.06 392.61 377.90 365.11 351.35 322.52 325.58	% Error -0.751 0.042 0.013 -0.171 -0.029 -5.744 5.167 -3.608 1.165 -5.049 -2.288 1.340 2.042 -5.744 % Error -0.036 0.021 -0.141 0.028 0.773 0.031 -6.308	Net 34 333.01 372.60 357.42 311.99 392.72 377.50 364.95 352.78 328.40 353.30 330.69 322.55 354.18 377.26 374.66 Worst Net 39 333.41 372.42 357.60 312.00 392.72 377.93 365.10 351.57	% Error -0.890 0.026 -0.022 -0.163 0.056 0.665 -0.015 -5.924 5.088 -3.205 0.975 -5.134 -2.430 1.279 1.948 -5.924 % Error -0.771 -0.022 0.028 -0.159 0.057 0.780 0.026 -6.249 4.944	Net 35 333.19 372.69 357.42 311.98 392.92 377.67 365.19 352.90 328.72 353.17 330.62 322.58 354.54 377.35 375.16 Worst Net 40 333.32 372.29 357.54 312.05 392.41 377.84 364.71 350.63	% Error -0.837 -0.052 -0.022 -0.166 0.108 0.711 0.053 -5.894 5.189 -3.242 0.952 -5.124 -2.331 1.302 2.085 -5.894 % Error -0.797 -0.056 0.010 -0.143 -0.022 0.757 -0.0788 -6.498 -6.224
Training Data Test Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 312.5 365 327.5 340 363 372.5 365 375.5 367.5 367.5 375.5 312.5 357.5 312.5 357.5 312.5 365 375.5 312.5 365 375.5 312.5 365 375.5 312.5 365 375.5 312.5 365 375.5 312.5 365 375.5 312.5 365 375.5 312.5 365 375.5 312.5 365 375.5 312.5 365 375.5 375.5 312.5 365 375.	Net 31 333.29 372.57 357.48 311.99 392.96 377.74 365.24 353.13 328.88 353.45 330.77 322.77 354.67 377.34 375.48 Worst Net 36 333.21 372.84 357.39 311.94 357.39 311.94 352.94 328.66	% Error -0.806 0.019 -0.004 -0.164 0.117 0.730 0.066 -5.833 5.241 -3.165 0.998 -5.068 -2.294 1.299 2.171 -5.833 % Error -0.831 0.091 -0.031 -0.179 0.100 0.722 0.040 -5.882 5.172	Net 32 333.30 372.58 357.50 311.98 392.96 377.77 365.14 353.30 328.82 353.36 330.80 322.82 354.82 377.35 375.68 Worst Net 37 333.28 372.41 357.55 311.99 392.73 377.81 365.17 351.59 327.35	% Error -0.804 0.023 0.000 -0.168 0.118 0.740 0.039 -5.786 5.223 -3.190 1.007 -5.054 -2.254 1.301 2.225 -5.786 % Error -0.810 -0.024 0.013 -0.163 0.750 0.046 -6.243 4.751	Net 33 333.48 372.66 357.55 311.97 392.43 377.97 364.90 353.46 328.65 351.83 331.32 322.83 354.69 377.49 375.01 Worst Net 38 333.35 372.36 357.58 312.06 392.61 377.90 365.11 351.35 327.69	% Error -0.751 0.042 0.013 -0.171 -0.029 -5.744 5.167 -3.608 1.165 -5.049 -2.288 1.340 2.042 -5.744 % Error -0.790 -0.360 0.021 -0.141 0.028 0.773 0.031 -6.308 4.862	Net 34 333.01 372.60 357.42 311.99 392.72 377.50 364.95 352.78 328.40 353.30 330.69 322.55 354.18 377.26 374.66 Worst Net 39 333.41 372.42 357.60 312.00 392.72 377.93 365.10 351.57 327.53	% Error -0.890 0.026 -0.022 -0.163 0.056 0.665 -0.015 -5.924 5.088 -3.205 0.975 -5.134 -2.430 1.279 1.948 -5.924 % Error -0.771 -0.022 0.028 -0.159 0.057 0.780 0.026 -6.249 4.811	Net 35 333.19 372.69 357.42 311.98 392.92 377.67 365.19 352.90 328.72 353.17 330.62 322.58 354.54 377.35 375.16 Worst Net 40 333.32 372.29 357.54 312.05 392.41 377.84 364.71 350.63 326.01 345.12 345.12 357.54 352.54 352.54 352.54 352.54 352.54 352.54 352.54 352.54 352.54 352.54 352.54 352.54 352.54 352.55 352.54 352.55 352.54 352.55 352.54 352.55 352.54 352.55 352.54 352.55 352.54 352.55 352.54 352.55 352.54 352.55 352.54 352.55 352.54 352.55 352.54 352.55 352.54 352.55 352.54 352.55 352.54 352.55 352.54 352.55 352.55 352.54 352.55 352.55 352.55 352.55 352.55 352.55 352.55 352.55 352.55 352.55 352.55 352.55 352.55 352.55 352.55 352.54 352.55	% Error -0.837 -0.052 -0.022 -0.166 0.108 0.711 0.053 -5.894 5.189 -3.242 0.952 -5.124 -2.331 1.302 2.085 -5.894 % Error -0.797 -0.056 0.010 -0.143 -0.022 0.757 -0.078 -6.498 4.324
ta Training Data Test Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 312.5 365 327.5 365 327.5 365 327.5 365 327.5 365 372.5 367.5 367.5 312.5 367.5 312.5 367.5 312.5 365 375.5 312.5 365 375.5 312.5 365 375.5 312.5 365.5 375.5 312.5 365.5 375.5 312.5 365.5 375.5 312.5 365.5 375.5 312.5 365.5 375.5 312.5 365.5 375.5 312.5 365.5 375.5 312.5 365.5 375.5 312.5 365.5 375.5 375.5 312.5 365.5 375.	Net 31 333.29 372.57 357.48 311.99 392.96 377.74 365.24 353.13 328.88 353.45 330.77 322.77 354.67 377.34 375.48 Worst Net 36 333.21 372.84 357.39 311.94 352.89 377.71 365.14 352.94 328.66 353.40	% Error -0.806 0.019 -0.004 -0.164 0.117 0.730 0.066 -5.833 5.241 -3.165 0.998 -5.068 -2.294 1.299 2.171 -5.833 */ Error -0.831 0.091 -0.179 0.100 0.722 0.040 -5.882 5.172 -3.179	Net 32 333.30 372.58 357.50 311.98 392.96 377.77 365.14 353.30 328.82 353.36 330.80 322.82 354.82 377.35 375.68 Worst Net 37 333.28 372.41 357.55 311.99 392.73 377.81 365.17 351.59 327.35 349.16	% Error -0.804 0.023 0.000 -0.168 0.118 0.740 0.039 -5.786 5.223 -3.190 1.007 -5.054 -2.254 1.301 2.225 -5.786 % Error -0.810 -0.024 0.013 -0.163 0.058 0.750 0.046 -6.243 4.751	Net 33 333.48 372.66 357.55 311.97 392.43 377.97 364.90 353.46 328.65 351.83 331.32 322.83 354.69 377.49 375.01 Worst Net 38 333.35 372.36 357.58 312.06 392.61 377.90 365.11 351.35 327.69 349.19	% Error -0.751 0.042 0.013 -0.171 -0.029 -5.744 5.167 -3.608 1.165 -5.049 -2.288 1.340 2.042 -5.744 * -5.744 0.036 0.021 -0.141 0.028 0.773 0.031 -6.308 4.862 -4.331	Net 34 333.01 372.60 357.42 311.99 392.72 377.50 364.95 352.78 328.40 353.30 330.69 322.55 354.18 377.26 374.66 Worst Net 39 333.41 372.42 357.60 312.00 312.00 312.00 312.00 312.72 377.93 365.10 351.57 327.53 349.88	% Error -0.890 0.026 -0.022 -0.163 0.056 0.665 -0.015 -5.924 5.088 -3.205 0.975 -5.134 -2.430 1.279 1.948 -5.924 *5.924 *0.075 -5.134 -2.430 1.279 1.948 -5.924 *6.0771 -0.022 0.028 -0.159 0.057 0.780 0.026 -6.249 4.811 -4.143	Net 35 333.19 372.69 357.42 311.98 392.92 377.67 365.19 352.90 328.72 353.17 330.62 322.58 354.54 377.35 375.16 Worst Net 40 333.32 372.29 357.54 312.05 392.41 377.84 364.71 350.63 326.01 347.49	% Error -0.837 -0.052 -0.022 -0.166 0.108 0.711 0.053 -5.894 5.189 -3.242 0.952 -5.124 -2.331 1.302 2.085 -5.894 * * -0.797 -0.056 0.010 -0.143 -0.022 0.757 -0.078 -6.498 4.324 -4.797
Data Training Data Test Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 365 327.5 365 327.5 367.5 367.5 367.5 367.5 327.5 367.5 312.5 367.5 327.5	Net 31 333.29 372.57 357.48 311.99 392.96 377.74 365.24 353.13 328.88 353.45 330.77 322.77 324.67 377.34 375.48 Worst Net 36 333.21 372.84 357.39 311.94 392.89 377.71 365.14 352.94 328.66 353.40 330.51	% Error -0.806 0.019 -0.004 -0.164 0.117 0.730 0.066 -5.833 5.241 -3.165 0.998 -5.068 -2.294 1.299 2.171 -5.833 % Error -0.831 0.091 -0.031 -0.179 0.100 0.722 0.040 -5.882 5.172 -3.179 0.918	Net 32 333.30 372.58 357.50 311.98 392.96 377.77 365.14 353.30 328.82 353.36 330.80 322.82 353.36 330.80 322.82 377.35 375.68 Worst Net 37 333.28 372.41 357.55 311.99 392.73 377.81 365.17 351.59 327.35 349.16 331.90	% Error -0.804 0.023 0.000 -0.168 0.118 0.740 0.039 -5.786 5.223 -3.190 1.007 -5.054 -2.254 1.301 2.225 -5.786 -0.024 0.013 -0.163 0.058 0.750 0.046 -6.243 4.751 -4.340 1.344	Net 33 333.48 372.66 357.55 311.97 392.43 377.97 364.90 353.46 328.65 351.83 331.32 322.83 354.69 377.49 375.01 Worst Net 38 333.35 372.36 357.58 312.06 392.61 377.90 365.11 351.35 327.69 349.19 332.32	% Error -0.751 0.042 0.013 -0.171 -0.029 -5.744 5.167 -3.608 1.165 -5.049 -2.288 1.340 2.042 -5.744 * -5.744 0.031 -6.308 4.862 -4.331 1.471	Net 34 333.01 372.60 357.42 311.99 392.72 377.50 364.95 352.78 328.40 353.30 330.69 322.55 354.18 377.26 374.66 Worst Net 39 333.41 372.42 357.60 312.00 392.72 377.93 365.10 351.57 327.53 349.88 331.01	% Error -0.890 0.026 -0.022 -0.163 0.056 0.665 -0.015 -5.924 5.088 -3.205 0.975 -5.134 -2.430 1.279 1.948 -5.924 *6 Error -0.771 -0.022 0.028 -0.159 0.057 0.780 0.026 -6.249 4.811 -4.143 1.072	Net 35 333.19 372.69 357.42 311.98 392.92 377.67 365.19 352.90 328.72 353.17 330.62 322.58 354.54 377.35 375.16 Worst Net 40 333.32 372.29 357.54 312.05 392.41 377.84 364.71 350.63 326.01 347.49 331.80	% Error -0.837 -0.052 -0.166 0.108 0.711 0.053 -5.894 5.189 -3.242 0.952 -5.124 -2.331 1.302 2.085 -5.894 * 9 -0.797 -0.056 0.010 -0.143 -0.022 0.757 -0.757 -0.757 -0.767 -0.078 -6.498 4.324 -4.797 1.312
st Data Training Data Test Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 365 327.5 365 327.5 363 372.5 367.5 367.5 312.5 365 375.5 312.5 392.5 375 312.5 365 375 312.5 365 375 312.5 365 375 312.5 365 375 312.5 365 375 312.5 365 375 312.5 365 375 312.5 365 375 312.5 365 375 312.5 365 375 312.5 365 375 312.5 365 375 312.5 365 375 375 365 375 375 312.5 365 375 375 312.5 365 375 375 312.5 365 375 375 312.5 365 375 375 375 312.5 365 375 375 312.5 365 375 375 312.5 365 375 375 375 375 375 375 375 37	Net 31 333.29 372.57 357.48 311.99 392.96 377.74 365.24 353.13 328.88 353.45 330.77 322.77 354.67 377.34 375.48 Worst Net 36 333.21 372.84 357.39 311.94 392.89 377.71 365.14 352.94 352.94 353.40 330.51 322.54	% Error -0.806 0.019 -0.004 -0.164 0.117 0.730 0.066 -5.833 5.241 -3.165 0.998 -5.068 -2.294 1.299 2.171 -5.833 % Error -0.831 0.091 -0.031 -0.179 0.100 0.722 0.040 -5.882 5.172 -3.179 0.918 -5.136	Net 32 333.30 372.58 357.50 311.98 392.96 377.77 365.14 353.30 328.82 353.36 330.80 322.82 353.36 330.80 322.82 354.82 377.35 375.68 Worst Net 37 333.28 372.41 357.55 311.99 392.73 377.81 365.17 351.59 327.35 349.16 331.90 322.68	% Error -0.804 0.023 0.000 -0.168 0.118 0.740 0.039 -5.786 5.223 -3.190 1.007 -5.054 -2.254 1.301 2.225 -5.786 % Error -0.810 -0.024 0.013 -0.163 0.058 0.750 0.046 -6.243 4.751 -4.340 1.344 -5.094	Net 33 333.48 372.66 357.55 311.97 392.43 377.97 364.90 353.46 328.65 351.83 331.32 322.83 354.69 377.49 375.01 Worst Net 38 333.35 372.36 357.58 312.06 392.61 377.90 365.11 377.90 365.11 327.69 349.19 332.32 322.83	% Error -0.751 0.042 0.013 -0.171 -0.029 -5.744 5.167 -3.608 1.165 -5.049 -2.288 1.340 2.042 -5.744 -5.744 5.049 -2.288 1.340 2.042 -5.744 % Error -0.790 -0.036 0.021 -0.141 0.028 0.773 0.031 -6.308 4.862 -4.331 1.471 -5.049	Net 34 333.01 372.60 357.42 311.99 392.72 377.50 364.95 352.78 328.40 353.30 330.69 322.55 354.18 377.26 374.66 Worst Net 39 333.41 372.42 357.60 312.00 392.72 377.93 365.10 351.57 327.53 349.88 331.01 322.57	% Error -0.890 0.026 -0.022 -0.163 0.056 0.665 -0.015 -5.924 5.088 -3.205 0.975 -5.134 -2.430 1.279 1.948 -5.924 >.0275 0.075 0.022 0.028 -0.159 0.057 0.780 0.026 -6.249 4.811 -4.143 1.072 -5.125	Net 35 333.19 372.69 357.42 311.98 392.92 377.67 365.19 352.90 328.72 353.17 330.62 322.58 354.54 377.35 375.16 Worst Net 40 333.32 372.29 357.54 312.05 392.41 377.84 364.71 350.63 326.01 347.49 331.80 321.96	% Error -0.837 -0.052 -0.166 0.108 0.711 0.053 -5.894 5.189 -3.242 0.952 -5.124 -2.331 1.302 2.085 -5.894 */ Error -0.797 -0.056 0.010 -0.143 -0.022 0.757 -0.078 -6.498 4.324 -4.797 1.312 -5.305
Test Data Training Data Test Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 365 327.5 340 363 372.5 367.5 312.5 367.5 312.5 327.5 312.5 327.5 312.5 327.5 312.5 327.5 312.5 327.5 312.5 327.5 327.5 340 327.5 365 327.5 340 327.5 365 327.5 340 327.5 365 327.5 365 327.5 327.5 327.5 327.5 327.5 327.5 326 327.5 327	Net 31 333.29 372.57 357.48 311.99 392.96 377.74 365.24 353.13 328.88 353.45 330.77 322.77 354.67 377.34 375.48 Worst Net 36 333.21 372.84 357.39 311.94 392.89 377.71 365.14 352.94 328.66 353.40 30.51 322.54 354.32	% Error -0.806 0.019 -0.004 -0.164 0.117 0.730 0.066 -5.833 5.241 -3.165 0.998 -5.068 -2.294 1.299 2.171 -5.833 % Error -0.031 -0.031 -0.031 -0.179 0.100 0.722 0.040 -5.882 5.172 -3.179 0.918 -5.136 -2.391	Net 32 333.30 372.58 357.50 311.98 392.96 377.77 365.14 353.30 328.82 353.36 330.80 322.82 354.82 377.55 375.68 Worst Net 37 333.28 372.41 357.55 311.99 392.73 377.81 365.17 351.59 327.35 349.16 331.90 322.68 354.89	% Error -0.804 0.023 0.000 -0.168 0.118 0.740 0.039 -5.786 5.223 -3.190 1.007 -5.054 -2.254 1.301 2.225 -5.786 % Error -0.810 -0.024 0.013 -0.163 0.058 0.750 0.046 -6.243 4.751 -4.340 1.344 -5.094 -2.235	Net 33 333.48 372.66 357.55 311.97 392.43 377.97 364.90 353.46 328.65 351.83 354.69 377.49 375.01 Worst Net 38 333.35 372.36 357.58 312.06 392.61 377.90 365.11 351.35 327.69 349.19 349.19 332.32 322.83 354.53	% Error -0.751 -0.042 0.013 -0.171 -0.029 -5.744 5.167 -3.608 1.165 -5.049 -2.288 1.340 2.042 -5.744 % Error -0.790 -0.036 0.021 -0.141 0.028 0.773 0.031 -6.308 4.862 -4.331 1.471 -5.049 -2.334	Net 34 333.01 372.60 357.42 311.99 392.72 377.50 364.95 352.78 328.40 330.69 322.55 354.18 377.26 374.66 Worst Net 39 333.41 372.42 357.60 312.00 392.72 377.93 365.10 351.57 327.53 349.88 331.01 322.57 355.06	% Error -0.820 -0.022 -0.163 0.056 -0.015 -5.924 5.088 -3.205 0.975 -5.134 -2.430 1.279 1.948 -5.924 % Error -0.771 -0.022 0.028 -0.159 0.057 0.780 0.026 -6.249 4.811 -4.143 1.072 -5.125 -2.187	Net 35 333.19 372.69 357.42 311.98 392.92 377.67 365.19 352.90 328.72 353.17 330.62 322.58 354.54 377.35 375.16 Worst Net 40 333.32 372.29 357.54 312.05 392.41 377.84 364.71 350.63 326.01 347.49 331.80 321.96 353.14	% Error -0.837 -0.052 -0.022 -0.166 0.108 0.711 0.053 -5.894 5.189 -3.242 0.952 -5.124 -2.331 1.302 2.085 -5.894 * 6.797 -0.0566 0.010 -0.143 -0.022 0.757 -0.078 -6.498 4.324 -4.797 1.312 -5.305 -2.717
Test Data Training Data Test Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 312.5 365 327.5 340 363 372.5 367.5 312.5 367.5 312.5 365 375.5 365 375.5 365 375.5 365 375.5 365 375.5 365 375.5 365 375.5 365 375.5 365 375.5 365 375.5 365 327.5 365 327.5 365 327.5 365 327.5 365 327.5 365 327.5 365 327.5 365 327.5 365 327.5 340 363 372.5 375.5 340 363 372.5 375.5 340 363 372.5 375.5 375.5 327.5	Net 31 333.29 372.57 357.48 311.99 392.96 377.74 365.24 353.13 328.88 353.45 330.77 322.77 354.67 377.34 375.48 Worst Net 36 333.21 372.84 353.32 333.21 372.84 357.39 311.94 392.89 377.71 365.14 352.94 328.66 353.40 330.51 322.54 322.54 322.54 322.54	% Error -0.806 0.019 -0.004 -0.164 0.117 0.730 0.066 -5.833 5.241 -3.165 0.998 -5.068 -2.294 1.299 2.171 -5.833 % Error -0.831 0.091 -0.031 -0.031 -0.031 -0.179 0.100 0.722 0.040 -5.882 5.172 -3.179 0.918 -5.136 -2.391 1.347	Net 32 333.30 372.58 357.50 311.98 392.96 377.77 365.14 353.30 328.82 353.36 330.80 322.82 354.82 377.35 375.68 Worst Net 37 333.28 372.41 357.55 311.99 392.73 377.81 365.17 351.59 327.35 349.16 331.90 322.68 354.89 376.73	% Error -0.804 0.023 0.000 -0.168 0.118 0.740 0.039 -5.786 5.223 -3.190 1.007 -5.054 -2.254 1.301 2.225 -5.786 % Error -0.810 -0.024 0.013 -0.163 0.058 0.750 0.046 -6.243 4.751 -4.3400 1.344 -5.094 -2.235 1.135	Net 33 333.48 372.66 357.55 311.97 392.43 377.97 364.90 353.46 328.65 351.83 331.32 322.83 354.69 377.49 375.01 Worst Net 38 312.06 392.61 377.90 365.11 357.58 312.06 392.61 377.90 365.11 357.58 312.06 392.61 377.90 365.11 351.35 327.69 349.19 322.83 354.53 376.39	% Error -0.751 0.042 0.013 -0.171 -0.029 -5.744 5.167 -3.608 1.165 -5.049 -2.288 1.340 2.042 -5.744 % Error -0.036 0.021 -0.141 0.028 0.773 0.031 -6.308 4.862 -4.331 1.471 -5.049	Net 34 333.01 372.60 357.42 311.99 392.72 377.50 364.95 352.78 328.40 353.30 330.69 322.55 354.18 377.26 374.66 Worst Net 39 333.41 372.42 357.60 312.00 392.72 377.93 365.10 351.57 327.53 349.88 331.01 322.57 355.06 377.17	% Error -0.890 0.026 -0.022 -0.163 0.056 0.056 -0.015 -5.924 5.088 -3.205 -5.134 -2.430 1.279 1.948 -5.924 0.075 -5.134 -2.430 1.279 1.948 -5.924 % Error -0.771 -0.022 0.028 -0.159 0.026 -6.249 4.811 -4.143 1.072 -5.125 -2.187 1.253	Net 35 333.19 372.69 357.42 311.98 392.92 377.67 365.19 352.90 328.72 353.17 330.62 322.58 354.54 377.35 375.16 Worst Net 40 333.32 372.29 357.54 312.05 392.41 377.84 364.71 350.63 326.01 347.49 331.80 321.96 353.14 376.22	% Error -0.837 -0.052 -0.022 -0.166 0.108 0.711 0.053 -5.894 5.189 -3.242 0.952 -5.124 -2.331 1.302 2.085 -5.894 *5.894 *0.056 0.010 -0.143 -0.022 0.757 -0.078 -6.498 4.324 -4.797 1.312 -5.305 -2.717 0.998
Test Data Training Data Test Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 312.5 365 375 312.5 365 327.5 340 363 372.5 367.5 312.5 365 375.5 312.5 365 375.5 312.5 365 375.5 312.5 365 377.5 377.5 365 377.5 365 377.5 377.5 365 377.5 3	Net 31 333.29 372.57 357.48 311.99 392.96 377.74 365.24 353.13 328.88 353.45 330.77 354.67 377.34 375.48 Worst Net 36 333.21 372.84 357.39 311.94 352.94 357.71 365.14 352.94 328.66 353.40 330.51 322.54 353.40 330.51 322.54 354.32 377.52 374.85	% Error -0.806 0.019 -0.004 -0.164 0.117 0.730 0.066 -5.833 5.241 -3.165 0.998 -5.068 -2.294 1.299 2.171 -5.833 % Error -0.831 0.091 -0.031 -0.179 0.100 0.722 0.040 -5.882 5.172 -3.179 0.918 -5.136 -2.391 1.347 2.001	Net 32 333.30 372.58 357.50 311.98 392.96 377.77 365.14 353.30 328.82 353.36 330.80 322.82 354.82 377.35 375.68 Worst Net 37 333.28 372.41 357.55 311.99 392.73 377.81 365.17 351.59 327.35 349.16 331.90 322.68 376.73 375.06	% Error -0.804 0.023 0.000 -0.168 0.118 0.740 0.039 -5.786 5.223 -3.190 1.007 -5.054 -2.254 1.301 2.225 -5.786 % Error -0.810 -0.024 0.013 -0.163 0.058 0.750 0.046 -6.243 4.751 -4.340 1.344 -5.094 -2.235 1.135	Net 33 333.48 372.66 357.55 311.97 392.43 377.97 364.90 353.46 328.65 351.83 331.32 322.83 354.69 377.49 375.01 Worst Net 38 333.35 372.36 392.61 377.90 365.11 351.35 327.69 349.19 332.32 322.83 354.53 376.39 374.74	% Error -0.751 0.042 0.013 -0.171 -0.029 -5.744 5.167 -3.608 1.165 -5.7049 -2.288 1.340 2.042 -5.744 % Error -0.790 -0.036 0.021 -0.141 0.028 0.773 0.031 -6.308 4.862 -4.331 1.471 -5.049 -2.334 1.971	Net 34 333.01 372.60 357.42 311.99 392.72 377.50 364.95 352.78 328.40 353.30 330.69 322.55 354.18 377.26 374.66 Worst Net 39 333.41 372.42 357.60 312.00 392.72 377.93 365.10 351.57 327.53 349.88 331.01 322.57 325.50 6 377.17 375.48	% Error -0.890 0.026 -0.022 -0.163 0.056 0.665 -0.015 -5.924 5.088 -3.205 0.975 -5.134 -2.430 1.279 1.948 -5.924 % Error -0.771 -0.022 0.028 -0.159 0.026 -6.249 4.811 -4.143 1.072 -5.125 -2.187 1.253 2.171	Net 35 333.19 372.69 357.42 311.98 392.92 377.67 365.19 352.90 328.72 353.17 330.62 322.58 354.54 377.35 375.16 Worst Net 40 333.32 372.29 357.54 312.05 392.41 377.84 364.71 350.63 322.01 347.49 331.80 321.96 353.14 375.16	% Error -0.837 -0.052 -0.022 -0.166 0.108 0.711 0.053 -5.894 5.189 -3.242 0.952 -5.124 -2.331 1.302 2.085 -5.894 * * -0.797 -0.056 0.010 -0.143 -0.022 0.757 -0.078 -6.498 4.324 -4.797 1.312 -5.305 -2.717 0.9988 1.727
Test Data Training Data Test Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 312.5 365 327.5 340 363 372.5 367.5 312.5 367.5 375.5 312.5 367.5 312.5 365.5 375.5 365.5 375.5 375.5 365.5 375.5 375.5 375.5 365.5 375.5 365.5 377.5 365.5 377.5 365.5 377.5 365.5 377.5 365.5 377.5 365.5 377.5 367.5 3	Net 31 333.29 372.57 357.48 311.99 392.96 377.74 365.24 353.13 328.88 353.45 330.77 322.77 354.67 377.34 375.48 Worst Net 36 333.21 372.84 357.39 311.94 357.39 311.94 352.94 355.14 352.94 328.66 353.40 330.51 322.54 354.32 377.52 374.85 Worst	% Error -0.806 0.019 -0.004 -0.164 0.117 0.730 0.066 -5.833 5.241 -3.165 0.998 -5.068 -2.294 1.299 2.171 -5.833 % Error -0.831 0.091 -0.031 -0.031 -0.031 -0.031 -0.031 -0.031 -0.031 -0.031 -0.031 -0.031 -0.031 -0.179 0.100 0.722 0.040 -5.882 5.172 -3.179 0.918 -5.136 -2.391 1.347 2.001 -5.882	Net 32 333.30 372.58 357.50 311.98 392.96 377.77 365.14 353.30 328.82 353.36 330.80 322.82 354.82 377.35 375.68 Worst Net 37 333.28 372.41 357.55 311.99 392.73 377.81 365.17 351.59 327.35 349.16 331.90 322.68 354.89 375.75 349.16 331.90 322.68 354.89 375.75 349.16 331.90 322.68 354.89 375.75 349.16 331.90 322.68 354.89 375.75 349.16 331.90 322.68 354.89 375.75 349.16 337.50 Worst	% Error -0.804 0.023 0.000 -0.168 0.118 0.740 0.039 -5.786 5.223 -3.190 1.007 -5.054 -2.254 1.301 2.225 -5.786 % Error -0.810 -0.024 0.013 -0.163 0.058 0.750 0.046 -6.243 4.751 -4.340 1.344 -5.094 -2.235 1.135 2.057 -6.243	Net 33 333.48 372.66 357.55 311.97 392.43 377.97 364.90 353.46 328.65 351.83 331.32 322.83 354.69 377.49 375.01 Worst Net 38 333.35 372.36 357.58 312.06 392.61 377.90 365.11 351.35 327.69 349.19 332.32 322.83 354.53 376.39 374.74 Worst	% Error -0.751 0.042 0.013 -0.171 -0.029 -5.744 5.167 -3.608 1.165 -5.744 5.167 -3.608 1.165 -5.7049 -2.288 1.340 2.042 -5.744 % Error -0.790 -0.036 0.021 -0.141 0.028 0.773 0.031 -6.308 4.862 -4.331 1.471 -5.049 -2.334 1.044 1.971 -6.308	Net 34 333.01 372.60 357.42 311.99 392.72 377.50 364.95 352.78 328.40 353.30 330.69 322.55 354.18 377.26 374.66 Worst Net 39 333.41 372.42 377.60 312.00 312.00 312.00 312.00 312.01 312.72 377.93 365.10 351.57 327.53 349.88 331.01 322.57 355.06 377.17 375.48 Worst	% Error -0.890 0.026 -0.022 -0.163 0.056 0.665 -0.015 -5.924 5.088 -3.205 0.975 -5.134 -2.430 1.279 1.948 -5.924 % Error -0.771 -0.022 0.028 -0.159 0.057 0.780 0.026 -6.249 4.811 -4.143 1.072 -2.187 1.253 2.171 -6.249	Net 35 333.19 372.69 357.42 311.98 392.92 377.67 365.19 352.90 328.72 353.17 330.62 322.58 354.54 377.35 375.16 Worst Net 40 333.32 372.29 357.54 312.05 392.41 377.84 364.71 350.63 322.601 347.49 331.80 321.96 353.14 376.22 373.85 Worst	% Error -0.837 -0.052 -0.022 -0.166 0.108 0.711 0.053 -5.894 5.189 -3.242 0.952 -5.124 -2.331 1.302 2.085 -5.894 *5.894 *0.797 -0.056 0.010 -0.143 -0.022 0.757 -0.078 -6.498 4.324 -4.797 1.312 -5.305 -2.717 0.998 1.727 -6.498

_	Actual	Net 41	% Error	Net 42	% Error	Net 43	% Error	Net 44	% Error	Net 45	% Error
	336	333.56	-0.726	333.83	-0.647	333.97	-0.605	333 27	-0.812	333 28	-0.809
at	372.5	372.45	-0.014	372.42	-0.022	372-26	-0.064	372.42	-0.023	372.13	-0.099
	357.5	357.62	0.034	357.60	0.029	357.69	0.054	357.51	0.004	357.63	0.036
Ĕ.	312.5	311.93	-0.182	312.09	-0.132	311.82	-0.219	312.15	-0.112	312.01	-0.158
l i	392.5	393.02	0.133	392.45	-0.012	392.38	-0.030	392.34	-0.040	392.35	-0.038
F.	375	377.99	0.797	378.24	0.864	378.27	0.872	377-74	0.732	377.80	0.746
	365	364.73	-0.074	365.23	0.064	364.43	-0.157	365.46	0.125	364.83	-0.047
	375	354.39	-5.496	352.14	-6.097	353-47	-5.742	338.31	-9.784	350.21	-6.610
	312.5	327.79	4.894	329.25	5.361	322.77	3.285	328.31	5.060	327.88	4.923
ata	365	352.48	-3.431	349.06	-4.367	344.85	-5.520	353.42	-3.171	351.40	-3.725
Ď	327.5	331.65	1.266	330.95	1.054	328-84	0.408	318.02	-2.894	329.23	0.529
st	340	323.21	-4.939	323.02	-4.993	322.26	-5.217	317.10	-6.735	321.78	-5.358
F	363	356.01	-1.925	354.99	-2.208	357.72	-1.455	348.97	-3.865	352.74	-2.826
	372.5	377.51	1.344	377.26	1.279	379.12	1.778	380-29	2.090	376.54	1.085
	367.5	377.02	2.590	374.59	1.929	378-25	2 924	375 94	2.297	373.61	1.664
		Worst	-5.496	Worst	-6.097	Worst	-5.742	Worst	-9.784	Worst	-6.610
	Actual	Net 46	% Error	Net 47	% Error	Net 48	% Error	Net 49	% Error	Net 50	% Error
	336	333.77	-0.663	333.76	-0.666	333.50	-0.743	333.17	-0.843	333.38	-0.781
at	372.5	372.13	-0.098	372.34	-0.044	372.59	0.025	372.42	-0.023	372.40	-0.027
	357.5	357.67	0.047	357.62	0.033	357.55	0.014	357.53	0.009	357.56	0.017
Ĩ.	312.5	312.12	-0.122	311.70	-0.255	312.15	-0.113	312.11	-0.125	312.02	-0.153
i	392.5	392.41	-0.022	392.49	-0.003	392.72	0.056	392.67	0.044	392.82	0.080
Ĕ	375	378.17	0.846	378.10	0.827	377.97	0.793	377.69	0.719	377.91	0.776
	365	364.70	-0.081	364.86	-0.038	365.53	0.144	365.38	0.103	365.07	0.018
	375	340.75	-9.135	322.10	-14.108	350.94	-6.416	350.83	-6.446	350.94	-6.415
	312.5	317.61	1.635	309.43	-0.981	326.48	4.474	327.62	4.839	326.52	4.487
ta	365	352.31	-3.476	363.60	-0.383	349.18	-4.335	350.91	-3.860	348.33	-4.568
D a	327.5	327.09	-0.125	311.17	-4.987	332.54	1.540	331.61	1.255	332.10	1.403
ti	340	320.46	-5.747	310.37	-8.714	322.53	-5.138	322.43	-5.167	322.32	-5.200
ب	363	354.62	-2.309	344.71	-5.038	354.54	-2.330	353.73	-2.554	355.05	-2.189
	372.5	378.94	1.730	388-28	4.237	376.60	1.101	376.69	1.126	376.65	1,113
	367.5	371.59	1.113	375.78	2.254	374.69	1.957	373.59	1.658	374.75	1.972
		Worst	-9.135	Worst	-14.108	Worst	-6.416	Worst	-6.446	Worst	-6.415
	Actual	Net 51	% Error	Net 52	% Error	Net 53	% Error	Net 54	% Error	Net 55	% Error
R	Actual 336	Net 51 333.27	% Error -0.811	Net 52 333.56	% Error -0.726	Net 53 333.55	% Error -0.729	Net 54 333.26	% Error -0.816	Net 55 333.57	% Error -0.725
Data	Actual 336 372.5	Net 51 333.27 372.41	% Error -0.811 -0.025	Net 52 333.56 372.45	% Error -0.726 -0.014	Net 53 333.55 372.29	% Error -0.729 -0.056	Net 54 333.26 372.38	% Error -0.816 -0.031	Net 55 333.57 371.99	% Error -0.725 -0.136
g Data	Actual 336 372.5 357.5	Net 51 333.27 372.41 357.54	% Error -0.811 -0.025 0.012	Net 52 333.56 372.45 357.62	% Error -0.726 -0.014 0.034	Net 53 333.55 372.29 357.57	% Error -0.729 -0.056 0.018	Net 54 333.26 372.38 357.61	% Error -0.816 -0.031 0.030	Net 55 333.57 371.99 357.67	% Error -0.725 -0.136 0.048
ing Data	Actual 336 372.5 357.5 312.5	Net 51 333.27 372.41 357.54 311.94	% Error -0.811 -0.025 0.012 -0.178	Net 52 333.56 372.45 357.62 311.93	% Error -0.726 -0.014 0.034 -0.182	Net 53 333.55 372.29 357.57 311.99	% Error -0.729 -0.056 0.018 -0.164	Net 54 333.26 372.38 357.61 311.71	% Error -0.816 -0.031 0.030 -0.253	Net 55 333.57 371.99 357.67 311.85	% Error -0.725 -0.136 0.048 -0.208
aining Data	Actual 336 372.5 357.5 312.5 392.5	Net 51 333 27 372 41 357 54 311.94 392 77	% Error -0.811 -0.025 0.012 -0.178 0.069	Net 52 333.56 372.45 357.62 311.93 393.02	% Error -0.726 -0.014 0.034 -0.182 0.133	Net 53 333.55 372.29 357.57 311.99 392.24 379.05	% Error -0.729 -0.056 0.018 -0.164 -0.066	Net 54 333.26 372.38 357.61 311.71 392.25 377.70	% Error -0.816 -0.031 0.030 -0.253 -0.063 0.721	Net 55 333.57 371.99 357.67 311.85 393.90 277.58	% Error -0.725 -0.136 0.048 -0.208 0.357
Training Data	Actual 336 372.5 357.5 312.5 392.5 375	Net 51 333.27 372.41 357.54 311.94 392.77 377.77	% Error -0.811 -0.025 0.012 -0.178 0.069 0.738	Net 52 333.56 372.45 357.62 311.93 393.02 377.99 264.72	% Error -0.726 -0.014 0.034 -0.182 0.133 0.797	Net 53 333.55 372.29 357.57 311.99 392.24 378.05 264.05	% Error -0.729 -0.056 0.018 -0.164 -0.066 0.814	Net 54 333.26 372.38 357.61 311.71 392.25 377.70 265.25	% Error -0.816 -0.031 0.030 -0.253 -0.063 0.721	Net 55 333.57 371.99 357.67 311.85 393.90 377.58 264.48	% Error -0.725 -0.136 0.048 -0.208 0.357 0.688
Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 275	Net 51 333.27 372.41 357.54 311.94 392.77 377.77 365.32	% Error -0.811 -0.025 0.012 -0.178 0.069 0.738 0.087	Net 52 333.56 372.45 357.62 311.93 393.02 377.99 364.73 254.20	% Error -0.726 -0.014 0.034 -0.182 0.133 0.797 -0.074	Net 53 333.55 372.29 357.57 311.99 392.24 378.05 364.95 364.95	% Error -0.729 -0.056 0.018 -0.164 -0.066 0.814 -0.014 7.031	Net 54 333.26 372.38 357.61 311.71 392.25 377.70 365.35 251 10	% Error -0.816 -0.031 0.030 -0.253 -0.063 0.721 0.096 6.248	Net 55 333.57 371.99 357.67 311.85 393.90 377.58 364.48 248.97	% Error -0.725 -0.136 0.048 -0.208 0.357 0.688 -0.141 6.041
Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 365 375	Net 51 333.27 372.41 357.54 311.94 392.77 377.77 365.32 352.07	% Error -0.811 -0.025 0.012 -0.178 0.069 0.738 0.087 -6.115 5.090	Net 52 333.56 372.45 357.62 311.93 393.02 377.99 364.73 354.39 227.70	% Error -0.726 -0.014 0.034 -0.182 0.133 0.797 -0.074 -5.496	Net 53 333.55 372.29 357.57 311.99 392.24 378.05 364.95 348.64 226.70	% Error -0.729 -0.056 0.018 -0.164 -0.066 0.814 -0.014 -7.031 -7.031	Net 54 333.26 372.38 357.61 311.71 392.25 377.70 365.35 351.19 226.02	% Error -0.816 -0.031 0.030 -0.253 -0.063 0.721 0.096 -6.348 4.614	Net 55 333.57 371.99 357.67 311.85 393.90 377.58 364.48 348.97 224.20	% Error -0.725 -0.136 0.048 -0.208 0.357 0.688 -0.141 -6.941
Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 312.5 305 375	Net 51 333.27 372.41 357.54 311.94 392.77 377.77 365.32 352.07 328.40 262.96	% Error -0.811 -0.025 0.012 -0.178 0.069 0.738 0.087 -6.115 5.089 2.546	Net 52 333.56 372.45 357.62 311.93 393.02 377.99 364.73 354.39 327.79	% Error -0.726 -0.014 0.034 -0.182 0.133 0.797 -0.074 -5.496 4.894 2.421	Net 53 333.55 372.29 357.57 311.99 392.24 378.05 364.95 348.64 326.79 362.20	% Error -0.729 -0.056 0.018 -0.164 -0.066 0.814 -0.014 -7.031 4.574 2.546	Net 54 333.26 372.38 357.61 311.71 392.25 377.70 365.35 351.19 326.92 350.68	% Error -0.816 -0.031 0.030 -0.253 -0.063 0.721 0.096 -6.348 4.614 2.923	Net 55 333.57 371.99 357.67 311.85 393.90 377.58 364.48 348.97 324.29 351.99	% Error -0.725 -0.136 0.048 -0.208 0.357 0.688 -0.141 -6.941 3.773 -3.565
ata Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 312.5 365 375 312.5 365 375 312.5	Net 51 333.27 372.41 357.54 311.94 392.77 377.77 365.32 352.07 328.40 352.06	% Error -0.811 -0.025 0.012 -0.178 0.069 0.738 0.087 -6.115 5.089 -3.546	Net 52 333.56 372.45 357.62 311.93 393.02 377.99 364.73 354.39 327.79 352.48 224.65	% Error -0.726 -0.014 -0.182 0.133 0.797 -0.074 -5.496 4.894 -3.431 1.266	Net 53 333.55 372.29 357.57 311.99 392.24 378.05 364.95 364.95 348.64 326.79 352.06 226.05	% Error -0.729 -0.056 0.018 -0.164 -0.066 0.814 -0.014 -7.031 4.574 -3.546 0.168	Net 54 333.26 372.38 357.61 311.71 392.25 377.70 365.35 351.19 326.92 350.68 330.03	% Error -0.816 -0.031 -0.030 -0.253 -0.063 0.721 0.096 -6.348 4.614 -3.923 1.046	Net 55 333.57 371.99 357.67 311.85 393.90 377.58 364.48 348.97 324.29 351.99 327.70	% Error -0.725 -0.136 0.048 -0.208 0.357 0.688 -0.141 -6.941 3.773 -3.565 0.060
t Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 312.5 365 327.5 327.5 340	Net 51 333.27 372.41 357.54 311.94 392.77 377.77 365.32 352.07 328.40 352.06 331.44 352.64	% Error -0.811 -0.025 0.012 -0.178 0.069 0.738 0.087 -6.115 5.089 -3.546 1.204	Net 52 333.56 372.45 357.62 311.93 393.02 377.99 364.73 354.39 327.79 352.48 331.65 222.24	% Error -0.726 -0.014 -0.182 0.133 0.797 -0.074 -5.496 4.894 -3.431 1.266 4.030	Net 53 333.55 372.29 357.57 311.99 392.24 378.05 364.95 348.64 326.79 352.06 352.06 326.95	% Error -0.729 -0.056 0.018 -0.164 -0.066 0.814 -0.014 -7.031 4.574 -3.546 -0.168 -5.763	Net 54 333.26 372.38 357.61 311.71 392.25 377.70 365.35 351.19 326.92 350.68 330.93 321.98	% Error -0.816 -0.031 0.030 -0.253 -0.063 0.721 0.096 -6.348 4.614 -3.923 1.046 -5.300	Net 55 333.57 371.99 357.67 311.85 393.90 377.58 364.48 348.97 324.29 351.99 327.70 320.72	% Error -0.725 -0.136 0.048 -0.208 0.357 0.688 -0.141 -6.941 3.773 -3.565 0.060 -5.671
est Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 312.5 365 327.5 340 262	Net 51 333.27 372.41 357.54 311.94 392.77 377.77 365.32 352.07 328.40 352.06 331.44 322.64	% Error -0.811 -0.025 0.012 -0.178 0.069 0.738 0.087 -6.115 5.089 -3.546 1.204 -5.106	Net 52 333.56 372.45 357.62 311.93 393.02 377.99 364.73 354.39 327.79 352.48 331.65 323.21 266.04	% Error -0.726 -0.014 -0.182 0.133 0.797 -0.074 -5.496 4.894 -3.431 1.266 -4.939 4.025	Net 53 333.55 372.29 357.57 311.99 392.24 378.05 364.95 348.64 326.79 352.06 326.95 320.41 354.85	% Error -0.729 -0.056 0.018 -0.164 -0.066 0.814 -0.014 -7.031 4.574 -3.546 -0.168 -5.763 -2.246	Net 54 333.26 372.38 357.61 311.71 392.25 377.70 365.35 351.19 326.92 350.68 330.93 321.98 321.98	% Error -0.816 -0.031 0.030 -0.253 -0.063 0.721 0.096 -6.348 4.614 -3.923 1.046 -5.300 -2.537	Net 55 333.57 371.99 357.67 311.85 393.90 377.58 364.48 348.97 324.29 351.99 327.70 320.72 352.19	% Error -0.725 -0.136 0.048 -0.208 0.357 0.688 -0.141 -6.941 3.773 -3.565 0.060 -5.671 -2.978
Test Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 312.5 365 327.5 340 363 327.5	Net 51 333.27 372.41 357.54 311.94 392.77 377.77 365.32 352.07 328.40 352.06 331.44 322.64 354.64 354.64 926.99	% Error -0.811 -0.025 0.012 -0.178 0.069 0.738 0.087 -6.115 5.089 -3.546 1.204 -5.106 -2.302 1.176	Net 52 333.56 372.45 357.62 311.93 393.02 377.99 364.73 354.39 327.79 352.48 331.65 323.21 356.01 377.51	% Error -0.726 -0.014 -0.182 0.133 0.797 -0.074 -5.496 4.894 -3.431 1.266 -4.939 -1.925 1.344	Net 53 333.55 372.29 357.57 311.99 392.24 378.05 364.95 348.64 326.79 352.06 326.95 320.41 354.85 327.75	% Error -0.729 -0.056 0.018 -0.164 -0.066 0.814 -0.014 -7.031 4.574 -3.546 -0.168 -5.763 -2.246 1.408	Net 54 333.26 372.38 357.61 311.71 392.25 377.70 365.35 351.19 326.92 350.68 330.93 321.98 353.79 376.84	% Error -0.816 -0.031 0.030 -0.253 -0.063 0.721 0.096 -6.348 4.614 -3.923 1.046 -5.300 -2.537 1.166	Net 55 333.57 371.99 357.67 311.85 393.90 377.58 364.48 348.97 324.29 351.99 327.70 320.72 352.19 327.75	% Error -0.725 -0.136 0.048 -0.208 0.357 0.688 -0.141 -6.941 3.773 -3.565 0.060 -5.671 -2.978 1.410
Test Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 312.5 365 327.5 340 363 372.5 340 363	Net 51 333.27 372.41 357.54 311.94 392.77 377.77 365.32 352.07 328.40 352.06 331.44 322.64 354.64 354.64 354.64 374.46	% Error -0.811 -0.025 0.012 -0.178 0.069 0.738 0.087 -6.115 5.089 -3.546 1.204 -5.106 -2.302 1.176	Net 52 333.56 372.45 357.62 311.93 393.02 377.99 364.73 354.39 327.79 352.48 331.65 323.21 356.01 377.51	% Error -0.726 -0.014 0.034 -0.182 0.133 0.797 -0.074 -5.496 4.894 -3.431 1.266 -4.939 -1.925 1.344 2.500	Net 53 333.55 372.29 357.57 311.99 392.24 378.05 364.95 348.64 326.79 352.06 326.95 320.41 354.85 377.75 375.62	% Error -0.729 -0.056 0.018 -0.164 -0.066 0.814 -0.014 -7.031 4.574 -3.546 -0.168 -5.763 -2.246 1.408 2.11	Net 54 333.26 372.38 357.61 311.71 392.25 377.70 365.35 351.19 326.92 350.68 330.93 321.98 353.79 376.84 373.77	% Error -0.816 -0.031 0.030 -0.253 -0.063 0.721 0.096 -6.348 4.614 -3.923 1.046 -5.300 -2.537 1.166 1.705	Net 55 333.57 371.99 357.67 311.85 393.90 377.58 364.48 348.97 324.29 351.99 327.70 320.72 352.19 377.75	% Error -0.725 -0.136 0.048 -0.208 0.357 0.688 -0.141 -6.941 3.773 -3.565 0.060 -5.671 -2.978 1.410 2.190
Test Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 312.5 365 327.5 340 363 372.5 367.5	Net 51 333.27 372.41 357.54 311.94 392.77 377.77 365.32 352.07 328.40 352.06 331.44 322.64 354.64 354.64 376.88 374.46 Worst	% Error -0.811 -0.025 0.012 -0.178 0.069 0.738 0.087 -6.115 5.089 -3.546 1.204 -5.106 -2.302 1.176 1.895	Net 52 333.56 372.45 357.62 311.93 393.02 377.99 364.73 354.39 327.79 352.48 331.65 323.21 356.01 377.51 377.02	% Error -0.726 -0.014 0.034 -0.182 0.133 0.797 -0.074 -5.496 4.894 -3.431 1.266 -4.939 -1.925 1.344 2.590 -5.496	Net 53 333.55 372.29 357.57 311.99 392.24 378.05 364.95 348.64 326.79 352.06 326.95 320.41 354.85 377.75 375.62 Worst	% Error -0.729 -0.056 0.018 -0.164 -0.066 0.814 -0.014 -7.031 4.574 -3.546 -0.168 -5.763 -2.246 1.408 2.211 -7.031	Net 54 333.26 372.38 357.61 311.71 392.25 377.70 365.35 351.19 326.92 350.68 330.93 321.98 353.79 376.84 373.77 Worst	% Error -0.816 -0.031 0.030 -0.253 -0.063 0.721 0.096 -6.348 4.614 -3.923 1.046 -5.300 -2.537 1.166 1.705 -6.348	Net 55 333.57 371.99 357.67 311.85 393.90 377.58 364.48 348.97 324.29 351.99 327.70 320.72 352.19 377.75 375.55 Worst	% Error -0.725 -0.136 0.048 -0.208 0.357 0.688 -0.141 -6.941 3.773 -3.565 0.060 -5.671 -2.978 1.410 2.190 -6.941
Test Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 365 327.5 340 363 372.5 367.5	Net 51 333.27 372.41 357.54 311.94 392.77 377.77 365.32 352.07 328.40 352.06 331.44 322.64 354.64 354.64 376.88 374.46 Worst	% Error -0.811 -0.025 0.012 -0.178 0.069 0.738 0.087 -6.115 5.089 -3.546 1.204 -5.106 -2.302 1.176 1.895 -6.115	Net 52 333.56 372.45 357.62 311.93 393.02 377.99 364.73 354.39 327.79 352.48 331.65 323.21 356.01 377.51 377.02 Worst	% Error -0.726 -0.014 0.034 -0.182 0.133 0.797 -0.074 -5.496 4.894 -3.431 1.266 -4.939 -1.925 1.344 2.590 -5.496	Net 53 333.55 372.29 357.57 311.99 392.24 378.05 364.95 348.64 326.79 352.06 326.95 320.41 354.85 377.75 375.62 Worst	% Error -0.729 -0.056 0.018 -0.164 -0.066 0.814 -0.014 -7.031 4.574 -3.546 -0.168 -5.763 -2.246 1.408 2.211 -7.031	Net 54 333.26 372.38 357.61 311.71 392.25 377.70 365.35 351.19 326.92 350.68 330.93 321.98 353.79 376.84 373.77 Worst	% Error -0.816 -0.031 0.030 -0.253 -0.063 0.721 0.096 -6.348 4.614 -3.923 1.046 -5.300 -2.537 1.166 1.705 -6.348	Net 55 333.57 371.99 357.67 311.85 393.90 377.58 364.48 348.97 324.29 351.99 327.70 320.72 352.19 377.75 375.55 Worst	% Error -0.725 -0.136 0.048 -0.208 0.357 0.688 -0.141 -6.941 3.773 -3.565 0.060 -5.671 -2.978 1.410 2.190 -6.941
Test Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 312.5 365 327.5 340 363 372.5 363 372.5 363 375.5 340 363 372.5 363 372.5 365 327.5 340 363 372.5 365 327.5 340 365 327.5 340 365 327.5 340 365 327.5 340 365 327.5 340 365 327.5 340 365 327.5 340 365 327.5 365 327.5 365 327.5 365 327.5 365 327.5 365 327.5 365 327.5 365 327.5 365 327.5 365 327.5 365 327.5 365 327.5 365 327.5 365 327.5 365 327.5 365 327.5 365 327.5 340 363 375 367.5 367.5 367.5 365 327.5 365 327.5 365 327.5 365 327.5 365 327.5 365 327.5 365 327.5 365 375 365 375 365 327.5 365 365 375 365 327.5 365 365 375 365 375 365 365 365 375 365 365 365 365 365 365 365 36	Net 51 333.27 372.41 357.54 311.94 392.77 377.77 365.32 352.07 328.40 352.06 331.44 322.64 354.64 354.64 376.88 374.46 Worst Net 56	% Error -0.811 -0.025 0.012 -0.178 0.069 0.738 0.087 -6.115 5.089 -3.546 1.204 -5.106 -2.302 1.176 1.895 -6.115	Net 52 333.56 372.45 357.62 311.93 393.02 377.99 364.73 354.39 327.79 352.48 331.65 323.21 356.01 377.51 377.02 Worst Net 57	% Error -0.726 -0.014 0.034 -0.182 0.133 0.797 -0.074 -5.496 4.894 -3.431 1.266 -4.939 -1.925 1.344 2.590 -5.496	Net 53 333.55 372.29 357.57 311.99 392.24 378.05 364.95 348.64 326.79 352.06 326.95 320.41 354.85 377.75 375.62 Worst	% Error -0.729 -0.056 0.018 -0.164 -0.066 0.814 -0.014 -7.031 4.574 -3.546 -0.168 -5.763 -2.246 1.408 2.211 -7.031	Net 54 333.26 372.38 357.61 311.71 392.25 377.70 365.35 351.19 326.92 350.68 330.93 321.98 353.79 376.84 373.77 Worst Net 59	% Error -0.816 -0.031 0.030 -0.253 -0.063 0.721 0.096 -6.348 4.614 -3.923 1.046 -5.300 -2.537 1.166 1.705 -6.348	Net 55 333.57 371.99 357.67 311.85 393.90 377.58 364.48 348.97 324.29 351.99 327.70 320.72 352.19 377.75 375.55 Worst Net 60	% Error -0.725 -0.136 0.048 -0.208 0.357 0.688 -0.141 -6.941 3.773 -3.565 0.060 -5.671 -2.978 1.410 2.190 -6.941 % Error
Test Data Training Data	Actual 336 372.5 357.5 312.5 392.5 365 375 365 327.5 340 363 372.5 363 372.5 363 372.5 365 327.5 340 363 372.5 363 372.5 340 363 372.5 363 372.5 365 327.5 340 365 327.5 340 365 327.5 340 365 327.5 340 365 327.5 340 365 327.5 340 365 327.5 340 365 327.5 340 365 327.5 340 365 327.5 340 365 327.5 340 365 327.5 340 365 327.5 340 363 375 363 375 363 375 365 327.5 340 363 375 363 375 363 375 365 327.5 365 327.5 340 363 375 363 375 363 375 363 375 363 375 363 375 365 327.5 365 327.5 365 327.5 363 375 363 375 363 375 363 375 363 375 363 375 363 375 363 375 363 375 363 375 363 375 365 363 375 365 363 375 365 365 365 365 365 365 365 36	Net 51 333.27 372.41 357.54 311.94 392.77 377.77 365.32 352.07 328.40 352.06 331.44 352.64 354.64 354.64 354.64 374.46 Worst Net 56 334.30	% Error -0.811 -0.025 0.012 -0.178 0.069 0.738 0.087 -6.115 5.089 -3.546 1.204 -5.106 -2.302 1.176 1.895 -6.115	Net 52 333.56 372.45 357.62 311.93 393.02 377.99 364.73 354.39 327.79 352.48 331.65 323.21 356.01 377.51 377.02 Worst Net 57 332.92	% Error -0.726 -0.014 0.034 -0.182 0.133 0.797 -0.074 -5.496 4.894 -3.431 1.266 -4.939 -1.925 1.344 2.590 -5.496 % Error -0.917	Net 53 333.55 372.29 357.57 311.99 392.24 378.05 364.95 348.64 326.79 352.06 326.95 320.41 354.85 377.75 375.62 Worst Net 58 332.90	% Error -0.729 -0.056 0.018 -0.164 -0.066 0.814 -0.014 -7.031 4.574 -3.546 -0.168 -5.763 -2.246 1.408 2.211 -7.031	Net 54 333.26 372.38 357.61 311.71 392.25 377.70 365.35 351.19 326.92 350.68 330.93 321.98 353.79 376.84 373.77 Worst Net 59 333.56	% Error -0.816 -0.031 0.030 -0.253 -0.063 0.721 0.096 -6.348 4.614 -3.923 1.046 -5.300 -2.537 1.166 1.705 -6.348 % Error -0.726	Net 55 333.57 371.99 357.67 311.85 393.90 377.58 364.48 348.97 324.29 351.99 327.70 320.72 352.19 377.75 375.55 Worst Net 60 333.43	% Error -0.725 -0.136 0.048 -0.208 0.357 0.688 -0.141 -6.941 3.773 -3.565 0.060 -5.671 -2.978 1.410 2.190 -6.941
ta Training Data Training Data	Actual 336 372.5 357.5 312.5 392.5 392.5 365 375 365 327.5 340 363 372.5 367.5 367.5 367.5 367.5 367.5 367.5 367.5 367.5 367.5 367.5 367.5 367.5 367.5 367.5 367.5 367.5 367.5 375.5 365.5 327.5 367.5 367.5 327.5 367.5 327.5 367.5 327.5	Net 51 333.27 372.41 357.54 311.94 392.77 377.77 365.32 352.07 328.40 352.06 331.44 322.64 354.64 354.64 374.46 Worst Net 56 334.30 372.08	% Error -0.811 -0.025 0.012 -0.178 0.069 0.738 0.087 -6.115 5.089 -3.546 1.204 -5.106 -2.302 1.176 1.895 -6.115	Net 52 333.56 372.45 357.62 311.93 393.02 377.99 364.73 354.39 327.79 352.48 331.65 323.21 356.01 377.51 377.02 Worst Net 57 332.92 371.63	% Error -0.726 -0.014 0.034 -0.182 0.133 0.797 -0.074 -5.496 4.894 -3.431 1.266 -4.939 -1.925 1.344 2.590 -5.496 % Error -0.917 -0.234	Net 53 333.55 372.29 357.57 311.99 392.24 378.05 364.95 348.64 326.79 352.06 326.95 320.41 354.85 377.75 375.62 Worst Net 58 332.90 373.01	% Error -0.729 -0.056 0.018 -0.164 -0.066 0.814 -0.014 -7.031 4.574 -3.546 -0.168 -5.763 -2.246 1.408 2.211 -7.031	Net 54 333.26 372.38 357.61 311.71 392.25 377.70 365.35 351.19 326.92 350.68 330.93 321.98 353.79 376.84 373.77 Worst Net 59 333.56 372.45	% Error -0.816 -0.031 0.030 -0.253 -0.063 0.721 0.096 -6.348 4.614 -3.923 1.046 -5.300 -2.537 1.166 1.705 -6.348	Net 55 333.57 371.99 357.67 311.85 393.90 377.58 364.48 348.97 324.29 351.99 327.70 320.72 352.19 377.75 375.55 Worst Net 60 333.43 372.38	% Error -0.725 -0.136 0.048 -0.208 0.357 0.688 -0.141 -6.941 3.773 -3.565 0.060 -5.671 -2.978 1.410 2.190 -6.941 % Error -0.764 -0.031
Data Test Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 327.5 365 327.5 340 363 372.5 367.5 367.5	Net 51 333.27 372.41 357.54 311.94 392.77 377.77 365.32 352.07 328.40 352.06 331.44 322.64 354.64 376.88 374.46 Worst Net 56 334.30 372.08 357.84	% Error -0.811 -0.025 0.012 -0.178 0.069 0.738 0.087 -6.115 5.089 -3.546 1.204 -5.106 -2.302 1.176 1.895 -6.115	Net 52 333.56 372.45 357.62 311.93 393.02 377.99 364.73 354.39 327.79 352.48 331.65 323.21 356.01 377.51 377.02 Worst Net 57 332.92 371.63 356.62	% Error -0.726 -0.014 0.034 -0.182 0.133 0.797 -0.074 -5.496 4.894 -3.431 1.266 -4.939 -1.925 1.344 2.590 -5.496 % Error -0.917 -0.234 -0.247	Net 53 333.55 372.29 357.57 311.99 392.24 378.05 364.95 348.64 326.79 352.06 326.95 320.41 354.85 377.75 375.62 Worst Net 58 332.90 373.01 357.27	% Error -0.729 -0.056 0.018 -0.164 -0.066 0.814 -0.014 -7.031 4.574 -3.546 -0.168 -5.763 -2.246 1.408 2.211 -7.031 % Error -0.922 0.137 -0.063	Net 54 333.26 372.38 357.61 311.71 392.25 377.70 365.35 351.19 326.92 350.68 330.93 321.98 353.79 376.84 373.77 Worst Net 59 333.56 372.45 357.62	% Error -0.816 -0.031 0.030 -0.253 -0.063 0.721 0.096 -6.348 4.614 -3.923 1.046 -5.300 -2.537 1.166 1.705 -6.348	Net 55 333.57 371.99 357.67 311.85 393.90 377.58 364.48 348.97 324.29 351.99 327.70 320.72 352.19 377.75 375.55 Worst Net 60 333.43 372.38 357.59	% Error -0.725 -0.136 0.048 -0.208 0.357 0.688 -0.141 -6.941 3.773 -3.565 0.060 -5.671 -2.978 1.410 2.190 -6.941 % Error -0.764 -0.031 0.026
ng Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 327.5 340 363 372.5 367.5 367.5 367.5 375.5 367.5 375.5 375.5 312.5 365.5 375.5 375.5 312.5 365.5 375.5 312.5 365.5 375.5 312.5 365.5 375.5 312.5 365.5 375.	Net 51 333.27 372.41 357.54 311.94 392.77 377.77 365.32 352.07 328.40 352.06 331.44 322.64 354.64 354.64 374.46 Worst Net 56 334.30 372.08 357.84 312.19	% Error -0.811 -0.025 0.012 -0.178 0.069 0.738 0.087 -6.115 5.089 -3.546 1.204 -5.106 -2.302 1.176 1.895 -6.115	Net 52 333.56 372.45 357.62 311.93 393.02 377.99 364.73 354.39 327.79 352.48 331.65 323.21 356.01 377.51 377.02 Worst Net 57 332.92 371.63 356.62 312.36	% Error -0.726 -0.014 0.034 -0.182 0.133 0.797 -0.074 -5.496 4.894 -3.431 1.266 -4.939 -1.925 1.344 2.590 -5.496 % Error -0.917 -0.234 -0.247 -0.044	Net 53 333.55 372.29 357.57 311.99 392.24 378.05 364.95 348.64 326.79 352.06 326.95 320.41 354.85 377.75 375.62 Worst Net 58 332.90 373.01 357.27 312.31	% Error -0.729 -0.056 0.018 -0.164 -0.066 0.814 -0.014 -7.031 4.574 -3.546 -0.168 -5.763 -2.246 1.408 2.211 -7.031 % Error -0.922 0.137 -0.063 -0.060	Net 54 333.26 372.38 357.61 311.71 392.25 377.70 365.35 351.19 326.92 350.68 330.93 321.98 353.79 376.84 373.77 Worst Net 59 333.56 372.45 357.62 311.93	% Error -0.816 -0.031 0.030 -0.253 -0.063 0.721 0.096 -6.348 4.614 -3.923 1.046 -5.300 -2.537 1.166 1.705 -6.348 % Error -0.726 -0.014 0.034 -0.182	Net 55 333.57 371.99 357.67 311.85 393.90 377.58 364.48 348.97 324.29 351.99 327.70 320.72 352.19 377.75 375.55 Worst Net 60 333.43 372.38 357.59 312.11	% Error -0.725 -0.136 0.048 -0.208 0.357 0.688 -0.141 -6.941 3.773 -3.565 0.060 -5.671 -2.978 1.410 2.190 -6.941 .0764 -0.031 0.026 -0.125
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raining Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 327.5 340 363 372.5 367.5 367.5 367.5 367.5 375.5 363 372.5 363 372.5 363 372.5 365 375.5 312.5 327.5 327.5 365 375.5 375.5 365 375.5 365 375.5 365 375.5 365 375.5 3	Net 51 333.27 372.41 357.54 311.94 392.77 377.77 365.32 352.07 328.40 352.06 331.44 352.64 352.64 354.64 376.88 374.46 Worst Net 56 334.30 372.08 357.84 312.19 392.38 378.45	% Error -0.811 -0.025 0.012 -0.178 0.069 0.738 0.087 -6.115 5.089 -3.546 1.204 -5.106 -2.302 1.176 1.895 -6.115	Net 52 333.56 372.45 357.62 311.93 393.02 377.99 364.73 354.39 327.79 352.48 331.65 323.21 356.01 377.51 377.02 Worst Net 57 332.92 371.63 356.62 312.36 392.29 376.13	% Error -0.726 -0.014 0.034 -0.182 0.133 0.797 -0.074 -5.496 4.894 -3.431 1.266 -4.939 -1.925 1.344 2.590 -5.496 % Error -0.917 -0.234 -0.247 -0.044 -0.055 0.301	Net 53 333.55 372.29 357.57 311.99 392.24 378.05 364.95 348.64 326.79 352.06 326.95 320.41 354.85 377.75 375.62 Worst Net 58 332.90 373.01 357.27 312.31 392.96 377.13	% Error -0.729 -0.056 0.018 -0.164 -0.066 0.814 -0.014 -7.031 4.574 -3.546 -0.168 -5.763 -2.246 1.408 2.211 -7.031 % Error -0.922 0.137 -0.063 -0.060 0.117 0.569	Net 54 333.26 372.38 357.61 311.71 392.25 377.70 365.35 351.19 326.92 350.68 330.93 321.98 331.98 333.56 372.45 333.56 372.45 357.62 311.93 393.02 377.99	% Error -0.816 -0.031 -0.030 -0.253 -0.063 0.721 0.096 -6.348 4.614 -3.923 1.046 -5.300 -2.537 1.166 1.705 -6.348 % Error -0.726 -0.014 0.034 -0.182 0.133 0.797	Net 55 333.57 371.99 357.67 311.85 393.90 377.58 364.48 348.97 324.29 351.99 327.70 320.72 352.19 327.75 375.55 Worst Net 60 333.43 372.38 357.59 312.11 392.66 377.98	% Error -0.725 -0.136 0.048 -0.208 0.357 0.688 -0.141 -6.941 3.773 -3.565 0.060 -5.671 -2.978 1.410 2.190 -6.941 .0.764 -0.031 0.026 -0.125 0.041 0.795
Training Data Test Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 365 327.5 340 363 372.5 367.5 367.5 Actual 336 372.5 357.5 312.5 327.5 363 372.5 363 372.5 365 375.5 312.5 365 375.5 365 375.5 365 375.5 365 375.5 365 375.5 365 375.5 365 375.5 365 375.5 365 375.5 365 375.5 365 375.5 375.5 365 375.5 37	Net 51 333.27 372.41 357.54 311.94 392.77 377.77 365.32 352.07 328.40 352.06 331.44 352.64 352.64 352.64 354.64 374.46 Worst Net 56 334.30 372.08 357.84 312.19 392.38 378.45 364.43	% Error -0.811 -0.025 0.012 -0.178 0.069 0.738 0.087 -6.115 5.089 -3.546 1.204 -5.106 -2.302 1.176 1.895 -6.115 % Error -0.506 -0.114 0.095 -0.030 0.920 -0.157	Net 52 333.56 372.45 357.62 311.93 393.02 377.99 364.73 354.39 327.79 352.48 331.65 323.21 356.01 377.51 377.02 Worst Net 57 332.92 371.63 356.62 312.36 392.29 376.13 365.14	% Error -0.726 -0.014 0.034 -0.182 0.133 0.797 -0.074 -5.496 4.894 -3.431 1.266 -4.939 -1.925 1.344 2.590 -5.496 % Error -0.917 -0.234 -0.247 -0.044 -0.055 0.301 0.038	Net 53 333.55 372.29 357.57 311.99 392.24 378.05 364.95 348.64 326.79 352.06 326.95 320.41 354.85 377.75 375.62 Worst Net 58 332.90 373.01 357.27 312.31 392.96 377.13 365.92	% Error -0.729 -0.056 0.018 -0.164 -0.066 0.814 -0.014 -7.031 4.574 -3.546 -0.168 -5.763 -2.246 1.408 2.211 -7.031 % Error -0.922 0.137 -0.063 -0.060 0.117 0.569 0.252	Net 54 333.26 372.38 357.61 311.71 392.25 377.70 365.35 351.19 326.92 350.68 330.93 321.98 353.79 376.84 373.77 Worst Net 59 333.56 372.45 357.62 311.93 393.02 377.99 364.73	% Error -0.816 -0.031 -0.030 -0.253 -0.063 0.721 0.096 -6.348 4.614 -3.923 1.046 -5.300 -2.537 1.166 1.705 -6.348 % Error -0.726 -0.014 0.034 -0.182 0.133 0.797 -0.074	Net 55 333.57 371.99 357.67 311.85 393.90 377.58 364.48 348.97 324.29 351.99 327.70 320.72 352.19 327.75 375.55 Worst Net 60 333.43 372.38 357.59 312.11 392.66 377.98 365.08	% Error -0.725 -0.136 0.048 -0.208 0.357 0.688 -0.141 -6.941 3.773 -3.565 0.060 -5.671 -2.978 1.410 2.190 -6.941 0.764 -0.031 0.026 -0.125 0.041 0.795 0.022
Training Data Test Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 312.5 365 327.5 340 363 372.5 367.5 367.5 367.5 367.5 327.5 367.5 363 372.5 365 375.5 312.5 365 375.5 312.5 365 375.5 312.5 365 375.5 312.5 365 375.5 312.5 365 375.5 365 375.5 365.5 377.5 365.5 377.5 365.5 377.5 365.5 377.5 365.5 377.5 365.5 377.5 375.5 365.5 377.5 365.5 377.5 365.5 377.5 365.5 377.5 375	Net 51 333.27 372.41 357.54 311.94 392.77 377.77 365.32 352.07 328.40 352.06 331.44 352.64 354.64 354.64 374.46 Worst Net 56 334.30 372.08 357.84 312.19 392.38 378.45 364.43 349.83	% Error -0.811 -0.025 0.012 -0.178 0.069 0.738 0.087 -6.115 5.089 -3.546 1.204 -5.106 -2.302 1.176 1.895 -6.115	Net 52 333.56 372.45 357.62 311.93 393.02 377.99 364.73 354.39 327.79 352.48 331.65 323.21 356.01 377.51 377.02 Worst Net 57 332.92 371.63 356.62 312.36 392.29 376.13 365.14 351.12	% Error -0.726 -0.014 0.034 -0.182 0.133 0.797 -0.074 -5.496 4.894 -3.431 1.266 -4.939 -1.925 1.344 2.590 -5.496 % Error -0.917 -0.234 -0.247 -0.044 -0.055 0.301 0.038 -6.369	Net 53 333.55 372.29 357.57 311.99 392.24 378.05 364.95 348.64 326.79 352.06 326.95 320.41 354.85 377.75 375.62 Worst Net 58 332.90 373.01 357.27 312.31 392.96 377.13 365.92 350.13	% Error -0.729 -0.056 0.018 -0.164 -0.066 0.814 -0.014 -7.031 4.574 -3.546 -0.168 -5.763 -2.246 1.408 2.211 -7.031 % Error -0.922 0.137 -0.063 -0.060 0.117 0.569 0.252 -6.633	Net 54 333.26 372.38 357.61 311.71 392.25 377.70 365.35 351.19 326.92 350.68 330.93 321.98 353.79 376.84 373.77 Worst Net 59 333.56 372.45 357.62 311.93 393.02 377.99 364.73 354.39	% Error -0.816 -0.031 -0.030 -0.253 -0.063 0.721 0.096 -6.348 4.614 -3.923 1.046 -5.300 -2.537 1.166 1.705 -6.348 % Error -0.726 -0.014 0.034 -0.182 0.133 0.797 -0.074 -5.496	Net 55 333.57 371.99 357.67 311.85 393.90 377.58 364.48 348.97 324.29 351.99 327.70 320.72 352.19 377.75 375.55 Worst Net 60 333.43 372.38 357.59 312.11 392.60 377.98 365.08	% Error -0.725 -0.136 0.048 -0.208 0.357 0.688 -0.141 -6.941 3.773 -3.565 0.060 -5.671 -2.978 1.410 2.190 -6.941 0.764 -0.031 0.026 -0.125 0.041 0.795 0.022 -6.370
Training Data Test Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 312.5 365 327.5 340 363 372.5 367.5 367.5 367.5 367.5 312.5 367.5 312.5 327.5 363 372.5 365 375.5 312.5 327.5 365 375.5 312.5 327.5 365 375.5 312.5 327.5 365 375.5 375.5	Net 51 333.27 372.41 357.54 311.94 392.77 365.32 352.07 328.40 352.06 331.44 352.64 354.64 354.64 374.46 Worst Net 56 334.30 372.08 357.84 312.19 392.38 378.45 364.43 349.83 325.88	% Error -0.811 -0.025 0.012 -0.178 0.069 0.038 0.087 -6.115 5.089 -3.546 1.204 -5.106 -2.302 1.176 1.895 -6.115	Net 52 333.56 372.45 357.62 311.93 393.02 377.99 364.73 354.39 327.79 352.48 331.65 323.21 356.01 377.51 377.02 Worst Net 57 332.92 371.63 356.62 312.36 392.29 376.13 365.14 351.12 328.69	% Error -0.726 -0.014 0.034 -0.182 0.133 0.797 -0.074 -5.496 4.894 -3.431 1.266 -4.939 -1.925 1.344 2.590 -5.496 % Error -0.917 -0.234 -0.247 -0.044 -0.055 0.301 0.038 -6.369 5.181	Net 53 333.55 372.29 357.57 311.99 392.24 378.05 364.95 348.64 326.79 352.06 326.95 320.41 354.85 377.75 375.62 Worst Net 58 332.90 373.01 357.27 312.31 392.96 377.13 365.92 350.13 328.30	% Error -0.729 -0.056 0.018 -0.164 -0.066 0.814 -0.014 -7.031 4.574 -3.546 -0.168 -5.763 -2.246 1.408 2.211 -7.031 % Error -0.922 0.137 -0.063 -0.060 0.117 0.569 0.252 -6.633 5.055	Net 54 333.26 372.38 357.61 311.71 392.25 377.70 365.35 351.19 326.92 350.68 330.93 321.98 353.79 376.84 373.77 Worst Net 59 333.56 372.45 357.62 311.93 393.02 377.99 364.73 354.39 327.79	% Error -0.816 -0.031 -0.030 -0.253 -0.063 0.721 0.096 -6.348 4.614 -3.923 1.046 -5.300 -2.537 1.166 1.705 -6.348 % Error -0.726 -0.014 0.034 -0.182 0.133 0.797 -0.074 -5.496 4.894	Net 55 333.57 371.99 357.67 311.85 393.90 377.58 364.48 348.97 324.29 351.99 327.70 320.72 352.19 377.75 375.55 Worst Net 60 333.43 372.38 357.59 312.11 392.66 377.98 365.08 351.11 328.36	% Error -0.725 -0.136 0.048 -0.208 0.357 0.688 -0.141 -6.941 3.773 -3.565 0.060 -5.671 -2.978 1.410 2.190 -6.941 0.764 -0.031 0.026 -0.125 0.041 0.795 0.022 -6.370 5.074
a Training Data Test Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 312.5 365 327.5 340 363 372.5 367.5 367.5 367.5 312.5 357.5 312.5 357.5 312.5 357.5 312.5 357.5 312.5 357.5 312.5 357.5 312.5 357.5 312.5 357.5 312.5 357.5 357.5 312.5 357.5 365 375 375 365 375 365 375 365 375 365 375 375 365 375 375 365 375 365 375 375 375 375 375 375 375 37	Net 51 333.27 372.41 357.54 311.94 392.77 365.32 352.07 328.40 352.06 331.44 352.64 354.64 354.64 374.46 Worst Net 56 334.30 372.08 357.84 312.19 392.38 378.45 364.43 349.83 325.88 355.69	% Error -0.811 -0.025 0.012 -0.178 0.069 0.738 0.087 -6.115 5.089 -3.546 1.204 -5.106 -2.302 1.176 1.895 -6.115	Net 52 333.56 372.45 357.62 311.93 393.02 377.99 364.73 354.39 327.79 352.48 331.65 323.21 356.01 377.51 377.02 Worst Net 57 332.92 371.63 356.62 312.36 392.29 376.13 365.14 328.69 352.44	% Error -0.726 -0.014 0.034 -0.182 0.133 0.797 -0.074 -5.496 4.894 -3.431 1.266 -4.939 -1.925 1.344 2.590 -5.496 % Error -0.917 -0.234 -0.247 -0.044 -0.055 0.301 0.038 -6.369 5.181 -3.441	Net 53 333.55 372.29 357.57 311.99 392.24 378.05 364.95 348.64 326.79 352.06 326.95 320.41 354.85 377.75 375.62 Worst Net 58 332.90 373.01 357.27 312.31 392.96 377.13 392.96 377.13 365.92 350.13 328.30 353.26	% Error -0.729 -0.056 0.018 -0.164 -0.066 0.814 -0.014 -7.031 4.574 -3.546 -0.168 -5.763 -2.246 1.408 2.211 -7.031 % Error -0.922 0.137 -0.063 -0.060 0.117 0.569 0.252 -6.633 5.055 -3.217	Net 54 333.26 372.38 357.61 311.71 392.25 377.70 365.35 351.19 326.92 350.68 330.93 321.98 353.79 376.84 373.77 Worst Net 59 333.56 372.45 357.62 311.93 393.02 377.99 364.73 354.39 327.79 352.48	% Error -0.816 -0.031 0.030 -0.253 -0.063 0.721 0.096 -6.348 4.614 -3.923 1.046 -5.300 -2.537 1.166 1.705 -6.348 % Error -0.726 -0.014 0.034 -0.182 0.133 0.797 -5.496 4.894 -3.431	Net 55 333.57 371.99 357.67 311.85 393.90 377.58 364.48 348.97 324.29 351.99 327.70 320.72 352.19 377.75 375.55 Worst Net 60 333.43 372.38 357.59 312.11 392.66 377.98 365.08 351.11 328.36 357.37	% Error -0.725 -0.136 0.048 -0.208 0.357 0.688 -0.141 -6.941 3.773 -3.565 0.060 -5.671 -2.978 1.410 2.190 -6.941 0.764 -0.031 0.026 -0.125 0.041 0.795 0.022 -6.370 5.074 -2.090
Data Training Data Test Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 327.5 365 327.5 340 363 372.5 367.5 367.5 367.5 312.5 367.5 312.5 357.5 312.5 357.5 312.5 357.5 312.5 365 375 375 312.5 365 375 375 365 375 375 365 375 375 365 375 375 365 375 375 365 375 375 365 375 375 365 375 375 365 375 375 365 375 375 365 375 375 365 375 365 375 365 375 365 375 365 375 365 375 365 375 365 375 365 375 365 375 365 375 365 375 365 375 365 375 365 375 375 365 375 375 375 365 375 375 375 365 375 375 375 375 375 375 375 37	Net 51 333.27 372.41 357.54 311.94 392.77 377.77 365.32 352.07 328.40 352.06 331.44 352.64 354.64 354.64 376.88 374.46 Worst Net 56 334.30 372.08 357.84 312.19 392.38 378.45 364.43 349.83 325.88 355.69 331.73	% Error -0.811 -0.025 0.012 -0.178 0.069 0.738 0.087 -6.115 5.089 -3.546 1.204 -5.106 -2.302 1.176 1.895 -6.115	Net 52 333.56 372.45 357.62 311.93 393.02 377.99 364.73 354.39 327.79 352.48 331.65 323.21 356.01 377.51 377.02 Worst Net 57 332.92 371.63 356.62 312.36 392.29 376.13 365.14 351.12 328.69 352.44 335.96	% Error -0.726 -0.014 0.034 -0.182 0.133 0.797 -0.074 -5.496 4.894 -3.431 1.266 -4.939 -1.925 1.344 2.590 -5.496 % Error -0.917 -0.234 -0.247 -0.044 -0.055 0.301 0.038 -6.369 5.181 -3.441 2.584	Net 53 333.55 372.29 357.57 311.99 392.24 378.05 364.95 348.64 326.79 352.06 326.95 320.41 354.85 377.75 375.62 Worst Net 58 332.90 373.01 357.27 312.31 392.96 377.13 365.92 350.13 328.30 353.26 329.95	% Error -0.729 -0.056 0.018 -0.164 -0.066 0.814 -0.014 -7.031 4.574 -3.546 -0.168 -5.763 -2.246 1.408 2.211 -7.031 % Error -0.922 0.137 -0.063 -0.060 0.117 0.569 0.252 -6.633 5.055 -3.217 0.749	Net 54 333.26 372.38 357.61 311.71 392.25 377.70 365.35 351.19 326.92 350.68 330.93 321.98 353.79 376.84 373.77 Worst Net 59 333.56 372.45 357.62 311.93 393.02 377.99 364.73 393.02 377.99 364.73 354.39 327.79 352.48 331.65	% Error -0.816 -0.031 0.030 -0.253 -0.063 0.721 0.096 -6.348 4.614 -3.923 1.046 -5.300 -2.537 1.166 1.705 -6.348 % Error -0.726 -0.014 0.0334 -0.182 0.133 0.797 -0.074 -5.496 4.894 -3.431	Net 55 333.57 371.99 357.67 311.85 393.90 377.58 364.48 348.97 324.29 351.99 327.70 320.72 352.19 377.75 375.55 Worst Net 60 333.43 372.38 357.59 312.11 392.66 377.98 365.08 365.08 351.11 328.36 357.37 330.91	% Error -0.725 -0.136 0.048 -0.208 0.357 0.688 -0.141 -6.941 3.773 -3.565 0.060 -5.671 -2.978 1.410 2.190 -6.941 0.764 -0.031 0.026 -0.125 0.041 0.795 0.022 -6.370 5.074 -2.090 1.042
st Data Training Data Test Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 365 327.5 340 363 372.5 367.5 367.5 367.5 312.5 367.5 312.5 365 375.5 312.5 365 375.5 312.5 365 375.5 312.5 365 375.5 312.5 365 375.5 312.5 365 375.5 312.5 365 375.5 312.5 365 375.5 312.5 365 375.5 312.5 365 375.5 312.5 365 375.5 312.5 365 375.5 365 375.5 312.5 365 327.5 340	Net 51 333.27 372.41 357.54 311.94 392.77 377.77 365.32 352.07 328.40 352.06 331.44 322.64 354.64 376.88 374.46 Worst Net 56 334.30 372.08 357.84 312.19 392.38 378.45 364.43 349.83 325.88 355.69 331.73 322.43	% Error -0.811 -0.025 0.012 -0.178 0.069 0.738 0.087 -6.115 5.089 -3.546 1.204 -5.106 -2.302 1.176 1.895 -6.115	Net 52 333.56 372.45 357.62 311.93 393.02 377.99 364.73 354.39 327.79 352.48 331.65 323.21 356.01 377.51 377.02 Worst Net 57 332.92 371.63 356.62 312.36 392.29 376.13 365.14 351.12 328.69 352.44 335.96 322.62	% Error -0.726 -0.014 0.034 -0.182 0.133 0.797 -0.074 -5.496 4.894 -3.431 1.266 -4.939 -1.925 1.344 2.590 -5.496 % Error -0.917 -0.234 -0.247 -0.044 -0.055 0.301 0.038 -6.369 5.181 -3.441 2.584 -5.111	Net 53 333.55 372.29 357.57 311.99 392.24 378.05 364.95 348.64 326.79 352.06 326.95 320.41 354.85 377.75 375.62 Worst Net 58 332.90 373.01 357.27 312.31 392.96 377.13 365.92 350.13 328.30 353.26 329.95 321.49	% Error -0.729 -0.056 0.018 -0.164 -0.066 0.814 -0.014 -7.031 4.574 -3.546 -0.168 -5.763 -2.246 1.408 2.211 -7.031 % Error -0.922 0.137 -0.063 -0.060 0.117 0.569 0.252 -6.33 5.055 -3.217 0.749 -5.445	Net 54 333.26 372.38 357.61 311.71 392.25 377.70 365.35 351.19 326.92 350.68 330.93 321.98 353.79 376.84 373.77 Worst Net 59 333.56 372.45 357.62 311.93 393.02 377.99 364.73 393.02 377.99 364.73 352.48 331.65 323.21	% Error -0.816 -0.031 0.030 -0.253 -0.063 0.721 0.096 -6.348 4.614 -3.923 1.046 -5.300 -2.537 1.166 1.705 -6.348 % Error -0.726 -0.014 0.034 -0.182 0.133 0.797 -5.496 4.894 -3.431 1.266 -4.939	Net 55 333.57 371.99 357.67 311.85 393.90 377.58 364.48 348.97 324.29 351.99 327.70 320.72 352.19 377.75 375.55 Worst Net 60 333.43 372.38 357.59 312.11 392.66 377.98 365.08 351.11 328.36 357.37 330.91 322.54	% Error -0.725 -0.136 0.048 -0.208 0.357 0.688 -0.141 -6.941 3.773 -3.565 0.060 -5.671 -2.978 1.410 2.190 -6.941 0.764 -0.031 0.026 -0.125 0.041 0.795 0.022 -6.370 5.074 -2.090 1.042 -5.134
Test Data Training Data Test Data Training Data	Actual 336 372.5 357.5 312.5 365 375 365 327.5 365 327.5 340 363 372.5 367.5 367.5 367.5 312.5 367.5 312.5 365 375.5 312.5 365 375.5 312.5 365 375.5 312.5 365 375.5 312.5 365 375.5 312.5 365 375.5 312.5 365 375.5 312.5 365 375.5 312.5 365 375.5 312.5 365 375.5 365 375.5 312.5 365 327.5 320 365 365 365 365 365 365 365 365	Net 51 333.27 372.41 357.54 311.94 392.77 377.77 365.32 352.07 328.40 352.06 331.44 322.64 354.64 374.46 Worst Net 56 334.30 372.08 357.84 312.19 392.38 378.45 364.43 349.83 325.88 355.69 331.73 322.43 350.05	% Error -0.811 -0.025 0.012 -0.178 0.069 0.738 0.087 -6.115 5.089 -3.546 1.204 -5.106 -2.302 1.176 1.895 -6.115 % Error -0.506 -0.114 0.095 -0.098 -0.030 0.920 -0.157 -6.713 4.282 -2.552 1.291 -5.168 -3.567	Net 52 333.56 372.45 357.62 311.93 393.02 377.99 364.73 354.39 327.79 352.48 331.65 323.21 356.01 377.51 377.02 Worst Net 57 332.92 371.63 356.62 312.36 392.29 376.13 365.14 351.12 328.69 352.44 335.96 322.62 351.09	% Error -0.726 -0.014 0.034 -0.182 0.133 0.797 -0.074 -5.496 4.894 -3.431 1.266 -4.939 -1.925 1.344 2.590 -5.496 % Error -0.917 -0.234 -0.247 -0.044 -0.055 0.301 0.038 -6.369 5.181 -3.441 2.584 -5.111 -3.281	Net 53 333.55 372.29 357.57 311.99 392.24 378.05 364.95 348.64 326.79 352.06 326.95 320.41 354.85 377.75 375.62 Worst Net 58 332.90 373.01 357.27 312.31 392.96 377.13 365.92 350.13 328.30 353.26 329.95 321.49 351.44	% Error -0.729 -0.056 0.018 -0.164 -0.066 0.814 -0.014 -7.031 4.574 -3.546 -0.168 -5.763 -2.246 1.408 2.211 -7.031 % Error -0.922 0.137 -0.063 -0.060 0.117 0.569 0.252 -6.633 5.055 -3.217 0.749 -5.445 -3.184	Net 54 333.26 372.38 357.61 311.71 392.25 377.70 365.35 351.19 326.92 350.68 330.93 321.98 353.79 376.84 373.77 Worst Net 59 333.56 372.45 357.62 311.93 393.02 377.99 364.73 354.39 327.79 364.73 354.39 327.79 364.73 354.39 327.79 364.73 354.39 327.79 364.73 354.39 327.79 364.73 354.39 327.79 364.73 354.39 327.79 364.73 354.39 327.79 364.73 354.39 327.79 364.73 354.39 327.79 364.73 354.39 327.79 364.73 354.39 327.79 364.73 354.39 327.79 364.73 354.39 327.79 365.321 356.01	% Error -0.816 -0.031 0.030 -0.253 -0.063 0.721 0.096 -6.348 4.614 -3.923 1.046 -5.300 -2.537 1.166 1.705 -6.348 % Error -0.726 -0.014 0.034 -0.182 0.133 0.797 -0.074 -5.496 4.894 -3.431 1.266 -4.939 -1.925	Net 55 333.57 371.99 357.67 311.85 393.90 377.58 364.48 348.97 324.29 351.99 327.70 320.72 352.19 377.75 375.55 Worst Net 60 333.43 372.38 357.59 312.11 392.66 377.98 365.08 351.11 328.36 357.37 330.91 322.54 354.31	% Error -0.725 -0.136 0.048 -0.208 0.357 0.688 -0.141 -6.941 3.773 -3.565 0.060 -5.671 -2.978 1.410 2.190 -6.941 0.764 -0.031 0.026 -0.125 0.041 0.795 0.022 -6.370 5.074 -2.090 1.042 -5.134 -2.394
Test Data Training Data Test Data Training Data	Actual 336 372.5 357.5 392.5 375 365 375 365 327.5 340 363 372.5 367.5 367.5 367.5 375.5 367.5 357.5 357.5 357.5 312.5 365 372.5 365 375.5 312.5 365 375.5 312.5 365 375.5 312.5 365 375.5 312.5 365 375.5 312.5 365 375.5 312.5 365 375.5 312.5 365 375.5 312.5 365 375.5 312.5 365 375.5 312.5 365 375.5 312.5 365 375.5 312.5 365 375.5 312.5 365 375.5 312.5 365 375.5 312.5 365 375.5 312.5 365 375.5 312.5 365 375.5 312.5 365 375.5 312.5 365.5 375.5 327.5 365.5 327.5 365.5 327.5 365.5 327.5 340.0 365.3 375.5 340.3 365.3 375.5 327.5 365.3 375.5 327.5 340.3 365.3 375.5 327.5 340.3 363.3 372.5 340.3 363.3 372.5 340.3 363.3 372.5 340.3 375.5	Net 51 333.27 372.41 357.54 311.94 392.77 377.77 365.32 352.07 328.40 352.06 331.44 322.64 354.64 354.64 374.46 Worst Net 56 334.30 372.08 357.84 372.08 357.84 322.88 355.69 331.73 322.43 355.05 382.58	% Error -0.811 -0.025 0.012 -0.178 0.069 0.738 0.087 -6.115 5.089 -3.546 1.204 -5.106 -2.302 1.176 1.895 -6.115 % Error -0.506 -0.114 0.095 -0.098 -0.030 0.920 -0.157 -6.713 4.282 -2.552 1.291 -5.168 -3.567 2.705	Net 52 333.56 372.45 357.62 311.93 393.02 377.99 364.73 354.39 327.79 352.48 331.65 323.21 375.02 Worst Net 57 332.92 371.63 356.62 371.63 356.62 312.36 392.29 376.13 365.14 351.12 328.69 352.44 355.46 355.44 355.46 357.46	% Error -0.726 -0.014 0.034 -0.182 0.133 0.797 -0.074 -5.496 4.894 -3.431 1.266 -4.939 -1.925 1.344 2.590 -5.496 % Error -0.917 -0.234 -0.247 -0.044 -0.055 0.301 0.038 -6.369 5.181 -3.441 2.584 -5.111 -3.281 0.666	Net 53 333.55 372.29 357.57 311.99 392.24 378.05 364.95 348.64 326.79 352.06 326.95 320.41 354.85 377.75 375.62 Worst Net 58 332.90 373.01 357.27 312.31 392.96 377.13 365.92 350.13 328.30 353.26 329.95 321.49 351.44 376.83	% Error -0.729 -0.056 0.018 -0.164 -0.066 0.814 -0.014 -7.031 4.574 -3.546 -0.168 -5.763 -2.246 1.408 2.211 -7.031 % Error -0.922 0.137 -0.063 -0.063 -0.569 0.252 -6.633 5.055 -3.217 0.749 -5.445 -3.184 1.162	Net 54 333.26 372.38 357.61 311.71 392.25 377.70 365.35 351.19 326.92 350.68 330.93 321.98 353.79 376.84 373.77 Worst Net 59 333.56 372.45 357.62 311.93 393.02 377.99 364.73 354.39 327.79 364.73 354.39 327.79 364.73 354.39 327.79 364.73 354.39 327.79 364.73 354.39 327.79 364.73 354.39 327.79 364.73 354.39 327.79 364.73 354.39 327.79 364.73 354.39 327.79 364.73 354.39 327.79 364.73 354.39 327.79 364.73 354.39 327.79 364.73 354.39 327.79 364.73 354.39 327.79 365.248 331.65 323.21 356.01 377.51	% Error -0.816 -0.031 0.030 -0.253 -0.063 0.721 0.096 -6.348 4.614 -3.923 1.046 -5.300 -2.537 1.166 1.705 -6.348 % Error -0.726 -0.014 0.034 -0.182 0.133 0.797 -0.074 -5.496 4.894 -3.431 1.266 -4.939 -1.925 1.344	Net 55 333.57 371.99 357.67 311.85 393.90 377.58 364.48 348.97 324.29 351.99 327.70 320.72 352.19 377.75 375.55 Worst Net 60 333.43 372.38 357.59 312.11 392.66 377.98 365.08 351.11 328.36 357.37 330.91 322.54 354.31 376.17	% Error -0.725 -0.136 0.048 -0.208 0.357 0.688 -0.141 -6.941 3.773 -3.565 0.060 -5.671 -2.978 1.410 2.190 -6.941 % Error -0.764 -0.031 0.026 -0.125 0.041 0.795 0.022 -6.370 5.074 -2.090 1.042 -5.134 -2.394 0.985
Test Data Training Data Test Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 312.5 365 327.5 340 363 372.5 367.5 367.5 312.5 367.5 312.5 367.5 312.5 367.5 312.5 367.5 312.5 365 375 312.5 365 375 312.5 367.5 312.5 365 375 312.5 367.5 312.5 365 375 312.5 365 375 375 365 375 365 375 365 375 365 375 365 375 375 365 375 375 365 375 375 375 375 375 375 375 37	Net 51 333.27 372.41 357.54 311.94 392.77 377.77 365.32 352.07 328.40 352.06 331.44 322.64 354.64 376.88 374.46 Worst Net 56 334.30 372.08 357.84 312.19 392.38 377.08 357.84 312.19 392.38 378.45 364.43 349.83 325.88 355.69 331.73 322.43 350.05 382.58 373.85	% Error -0.811 -0.025 0.012 -0.178 0.069 0.738 0.087 -6.115 5.089 -3.546 1.204 -5.106 -2.302 1.176 1.895 -6.115 % Error -0.506 -0.114 0.095 -0.030 0.920 -0.157 -6.713 4.282 -2.552 1.291 -5.168 -3.567 2.705 1.727	Net 52 333.56 372.45 357.62 311.93 393.02 377.99 364.73 354.39 327.79 352.48 331.65 323.21 356.01 377.51 377.02 Worst Net 57 332.92 371.63 356.62 312.36 392.29 371.63 356.62 312.36 392.29 376.13 365.14 351.12 328.69 352.44 335.96 322.62 351.09 374.98 368.98	% Error -0.726 -0.014 0.034 -0.182 0.133 0.797 -0.074 -5.496 4.894 -3.431 1.266 -4.939 -1.925 1.344 2.590 -5.496 % Error -0.917 -0.234 -0.247 -0.044 -0.055 0.301 0.038 -6.369 5.181 -3.281 0.666 0.403	Net 53 333.55 372.29 357.57 311.99 392.24 378.05 364.95 348.64 326.79 352.06 326.95 320.41 354.85 377.75 375.62 Worst Net 58 332.90 373.01 357.27 312.31 392.96 377.13 365.92 350.13 328.30 353.26 329.95 321.49 351.44 376.83 371.69	% Error -0.729 -0.056 0.018 -0.164 -0.066 0.814 -0.014 -7.031 4.574 -3.546 -0.168 -5.763 -2.246 1.408 2.211 -7.031 % Error -0.922 0.137 -0.063 -0.063 -0.055 -3.217 0.749 -3.184 1.162 1.140	Net 54 333.26 372.38 357.61 311.71 392.25 377.70 365.35 351.19 326.92 350.68 330.93 321.98 353.79 376.84 373.77 Worst Net 59 333.56 372.45 357.62 311.93 393.02 377.99 364.73 393.02 377.99 364.73 352.48 331.65 323.21 356.01 377.51 377.02	% Error -0.816 -0.031 -0.030 -0.253 -0.063 0.721 0.096 -6.348 4.614 -3.923 1.046 -5.300 -2.537 1.166 1.705 -6.348 % Error -0.726 -0.014 0.034 -0.182 0.133 0.797 -0.074 -5.496 4.894 -3.431 1.266 -4.939 -1.925 1.344 2.590	Net 55 333.57 371.99 357.67 311.85 393.90 377.58 364.48 348.97 324.29 351.99 327.70 320.72 352.19 377.75 375.55 Worst Net 60 333.43 372.38 357.59 312.11 392.66 377.98 365.08 351.11 328.36 357.37 330.91 322.54 354.31 376.17 376.84	% Error -0.725 -0.136 0.048 -0.208 0.357 0.688 -0.141 -6.941 3.773 -3.565 0.060 -5.671 -2.978 1.410 2.190 -6.941 0.026 -0.764 -0.031 0.022 -0.370 5.074 -2.990 1.042 -5.134 -2.394 0.985 2.542

	Actual	Net 61	% Error	Net 62	% Error	Net 63	% Error	Net 64	% Error	Net 65	% Error
	336	332.63	-1.004	329.64	-1.893	303.09	-9.795	303.32	-9.725	303.83	-9.574
ati	372.5	372.08	-0.112	373.01	0.138	372.53	0.009	372.55	0.013	372.58	0.020
12	357.5	357.39	-0.030	357.02	-0.133	357.46	-0.011	357.45	-0.013	357.44	-0.018
E .	312.5	312.20	-0.097	312.34	-0.052	312.25	-0.080	312.23	-0.087	312.18	-0.103
Ē	392.5	392.39	-0.029	393.16	0.169	392.75	0.063	392.78	0.070	392.85	0.090
2	375	377.40	0.640	379.30	1.146	377 10	0.560	377 35	0.627	377.88	0.000
	365	364.43	-0.156	367.34	0.641	365 75	0.300	365.86	0.027	366.09	0.205
	375	354.31	-5 518	326.14	-13.030	316.22	15 672	319.44	15 002	300.00	0.295
	312.5	324 51	3.842	314 71	0.706	305.00	-15.073	310.44	-15.063	322.17	-14.089
8	365	357.27	2 1 1 0	400.95	0.700	305.66	-2.119	306.46	-1.933	307.45	-1.618
at	327.5	225.27	2.119	400.65	9.623	391.25	7.191	389.78	6.789	387.38	6.132
	340	333.57	2.404	305.00	-0.009	313.24	-4.355	314.37	-4.009	316.22	-3.443
es	340	323.39	-4.827	311.77	-8.303	302.92	-10.906	303.09	-10.856	303.46	-10.748
	303	356.20	-1.8/3	347.49	-4.272	316 40	-12.837	318.81	-12,174	322.92	-11.042
	372.5	375.27	0.743	388.14	4.199	392.57	5 389	391.92	5.213	391.00	4.966
_	367.5	377.72	2.780	381.57	3.830	371.69	1.141	373.20	1.552	375.52	2.182
		Worst	-5.518	Worst	-13.030	Worst	-15.673	Worst	-15.083	Worst	-14.089
·	Actual	Net 66	% Error	Net 67	% Error	Net 68	% Error	Net 69	% Error	Net 70	% Error
	336	306.05	-8.912	333.29	-0.807	333.58	-0.720	333.64	-0.704	333.84	-0.644
ata	372.5	372.71	0.056	372.38	-0.031	372.45	-0.013	372.43	-0.020	372.56	0.015
	357.5	357.35	-0.041	357.56	0.018	357.60	0.028	357.64	0.039	357.65	0.042
	312.5	312.00	-0.161	312.03	-0.151	311.99	-0.163	311.97	-0.170	311.98	-0.167
Ē	392.5	393.14	0.163	392.66	0.041	392.75	0.063	392.81	0.079	393.00	0.128
La	375	379.95	1.320	377.83	0.755	378.11	0.829	378.08	0.823	378.16	0.844
	365	367.02	0.554	364.98	-0.005	364.91	-0.024	364.62	-0.105	364.89	-0.031
	375	332.11	-11 438	361.92	-3.489	359.45	-4 147	357.70	-4.615	356 16	-5.023
	312.5	310.11	-0.763	325 31	4 099	326.05	4 335	326.69	4 540	327 34	4 748
69	365	381 10	4 4 10	355.02	-2.489	354 16	-2.970	352.70	-3 360	352 41	-3.448
at	327.5	321 11	1 950	335.62	2.403	224.40	-2.970	332.70	1 962	222.41	1 6 2 9
	340	305.06	10.275	227 17	2.402	334.49	2.130	333.00	1.002	332.00	1.030
e.	340	303.00	-10.275	327.17	-3.112	325.30	-4.204	324.43	-4.579	323.03	-4.750
-	303	334.17	-7.943	305.15	0.592	301.87	-0.313	359.22	-1.042	357.45	-1.530
	372.5	369.47	4.556	378.98	1.741	378.79	1.687	378.30	1.573	378.07	1.497
	367.5	380.63	3.5/3	385.94	5.019	383.11	4.248	380.66	3.581	378.69	3.046
		worst	-11.438	worst	5.019	Worst	4.335	Worst	-4.615	Worst	-5.023
	Actual	Not 71	% Error	Not 72	% Error	Not 73	% Error	Not 74	% Error	Not 75	% Error
	Actual	Net 71	% Error	Net 72	% Error	Net 73	% Error	Net 74	% Error	Net 75	% Error
g	Actual 336	Net 71 333.56	% Error -0.726	Net 72 333.20	% Error -0.833	Net 73 333.91	% Error -0.622	Net 74 336.15	% Error 0.046	Net 75 332.77	% Error -0.961
Data	Actual 336 372.5	Net 71 333.56 372.45	% Error -0.726 -0.014	Net 72 333.20 372.21	% Error -0.833 -0.078	Net 73 333.91 372.79	% Error -0.622 0.077	Net 74 336.15 372.98	% Error 0.046 0.128	Net 75 332.77 372.93	% Error -0.961 0.116
g Data	Actual 336 372.5 357.5	Net 71 333.56 372.45 357.62	% Error -0.726 -0.014 0.034	Net 72 333.20 372.21 357.57	% Error -0.833 -0.078 0.020	Net 73 333.91 372.79 357.67	% Error -0.622 0.077 0.048	Net 74 336.15 372.98 357.14	% Error 0.046 0.128 -0.102	Net 75 332.77 372.93 357.36	% Error -0.961 0.116 -0.038
ing Data	Actual 336 372.5 357.5 312.5	Net 71 333.56 372.45 357.62 311.93	% Error -0.726 -0.014 0.034 -0.182	Net 72 333.20 372.21 357.57 311.95	% Error -0.833 -0.078 0.020 -0.177	Net 73 333.91 372.79 357.67 311.94	% Error -0.622 0.077 0.048 -0.180	Net 74 336.15 372.98 357.14 312.37	% Error 0.046 0.128 -0.102 -0.042	Net 75 332.77 372.93 357.36 312.06	% Error -0.961 0.116 -0.038 -0.139
aining Data	Actual 336 372.5 357.5 312.5 392.5	Net 71 333.56 372.45 357.62 311.93 393.02	% Error -0.726 -0.014 0.034 -0.182 0.133	Net 72 333.20 372.21 357.57 311.95 392.93	% Error -0.833 -0.078 0.020 -0.177 0.110	Net 73 333.91 372.79 357.67 311.94 393.10	% Error -0.622 0.077 0.048 -0.180 0.152	Net 74 336.15 372.98 357.14 312.37 392.81	% Error 0.046 0.128 -0.102 -0.042 0.080	Net 75 332.77 372.93 357.36 312.06 393.12	% Error -0.961 0.116 -0.038 -0.139 0.158
Training Data	Actual 336 372.5 357.5 312.5 392.5 375	Net 71 333.56 372.45 357.62 311.93 393.02 377.99	% Error -0.726 -0.014 0.034 -0.182 0.133 0.797	Net 72 333.20 372.21 357.57 311.95 392.93 377.50	% Error -0.833 -0.078 0.020 -0.177 0.110 0.667	Net 73 333.91 372.79 357.67 311.94 393.10 378.33	% Error -0.622 0.077 0.048 -0.180 0.152 0.889	Net 74 336.15 372.98 357.14 312.37 392.81 376.29	% Error 0.046 0.128 -0.102 -0.042 0.080 0.344	Net 75 332.77 372.93 357.36 312.06 393.12 378.29	% Error -0.961 0.116 -0.038 -0.139 0.158 0.876
Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365	Net 71 333.56 372.45 357.62 311.93 393.02 377.99 364.73	% Error -0.726 -0.014 0.034 -0.182 0.133 0.797 -0.074	Net 72 333.20 372.21 357.57 311.95 392.93 377.50 364.36	% Error -0.833 -0.078 0.020 -0.177 0.110 0.667 -0.174	Net 73 333.91 372.79 357.67 311.94 393.10 378.33 365.49	% Error -0.622 0.077 0.048 -0.180 0.152 0.889 0.135	Net 74 336.15 372.98 357.14 312.37 392.81 376.29 366.14	% Error 0.046 0.128 -0.102 -0.042 0.080 0.344 0.312	Net 75 332.77 372.93 357.36 312.06 393.12 378.29 366.05 269.72	% Error -0.961 0.116 -0.038 -0.139 0.158 0.876 0.287
Training Data	Actual 336 372.5 357.5 312.5 392.5 392.5 375 365 375	Net 71 333.56 372.45 357.62 311.93 393.02 377.99 364.73 354.39	% Error -0.726 -0.014 0.034 -0.182 0.133 0.797 -0.074 -5.496	Net 72 333.20 372.21 357.57 311.95 392.93 377.50 364.36 353.49	% Error -0.833 -0.078 0.020 -0.177 0.110 0.667 -0.174 -5.737	Net 73 333.91 372.79 357.67 311.94 393.10 378.33 365.49 354.60	% Error -0.622 0.077 0.048 -0.180 0.152 0.889 0.135 -5.439	Net 74 336.15 372.98 357.14 312.37 392.81 376.29 366.14 352.96	% Error 0.046 0.128 -0.102 -0.042 0.080 0.344 0.312 -5.878	Net 75 332.77 372.93 357.36 312.06 393.12 378.29 366.05 350.73	% Error -0.961 0.116 -0.038 -0.139 0.158 0.876 0.287 -6.473 -6.473
Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 312.5	Net 71 333.56 372.45 357.62 311.93 393.02 377.99 364.73 354.39 327.79	% Error -0.726 -0.014 0.034 -0.182 0.133 0.797 -0.074 -5.496 4.894	Net 72 333.20 372.21 357.57 311.95 392.93 377.50 364.36 353.49 328.09	% Error -0.833 -0.078 0.020 -0.177 0.110 0.667 -0.174 -5.737 4.990	Net 73 333.91 372.79 357.67 311.94 393.10 378.33 365.49 354.60 328.30	% Error -0.622 0.077 0.048 -0.180 0.152 0.889 0.135 -5.439 5.058	Net 74 336.15 372.98 357.14 312.37 392.81 376.29 366.14 352.96 329.96	% Error 0.046 0.128 -0.102 -0.042 0.080 0.344 0.312 -5.878 5.587	Net 75 332.77 372.93 357.36 312.06 393.12 378.29 366.05 350.73 328.00	% Error -0.961 0.116 -0.038 -0.139 0.158 0.876 0.287 -6.473 4.961
ata Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 312.5 365 312.5 365	Net 71 333.56 372.45 357.62 311.93 393.02 377.99 364.73 354.39 327.79 352.48	% Error -0.726 -0.014 0.034 -0.182 0.133 0.797 -0.074 -5.496 4.894 -3.431	Net 72 333.20 372.21 357.57 311.95 392.93 377.50 364.36 353.49 328.09 352.68	% Error -0.833 -0.078 0.020 -0.177 0.110 0.667 -0.174 -5.737 4.990 -3.374	Net 73 333.91 372.79 357.67 311.94 393.10 378.33 365.49 354.60 328.30 353.35	% Error -0.622 0.077 0.048 -0.180 0.152 0.889 0.135 -5.439 5.058 -3.191	Net 74 336.15 372.98 357.14 312.37 392.81 376.29 366.14 352.96 329.96 352.28	% Error 0.046 0.128 -0.102 -0.042 0.080 0.344 0.312 -5.878 5.587 -3.486	Net 75 332.77 372.93 357.36 312.06 393.12 378.29 366.05 350.73 328.00 353.24	% Error -0.961 0.116 -0.038 -0.139 0.158 0.876 0.287 -6.473 4.961 -3.222
Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 312.5 365 327.5	Net 71 333.56 372.45 357.62 311.93 393.02 377.99 364.73 354.39 327.79 352.48 331.65	% Error -0.726 -0.014 0.034 -0.182 0.133 0.797 -0.074 -5.496 4.894 -3.431 1.266	Net 72 333.20 372.21 357.57 311.95 392.93 377.50 364.36 353.49 328.09 352.68 330.98	% Error -0.833 -0.078 0.020 -0.177 0.110 0.667 -0.174 -5.737 4.990 -3.374 1.062	Net 73 333.91 372.79 357.67 311.94 393.10 378.33 365.49 354.60 328.30 353.35 331.75	% Error -0.622 0.077 0.048 -0.180 0.152 0.889 0.135 -5.439 5.058 -3.191 1.298	Net 74 336.15 372.98 357.14 312.37 392.81 376.29 366.14 352.96 329.96 352.28 330.98	% Error 0.046 0.128 -0.102 -0.042 0.080 0.344 0.312 -5.878 5.587 -3.486 1.063	Net 75 332.77 372.93 357.36 312.06 393.12 378.29 366.05 350.73 328.00 353.24 330.30	% Error -0.961 0.116 -0.038 -0.139 0.158 0.876 0.287 -6.473 4.961 -3.222 0.856
st Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 312.5 365 312.5 365 327.5 340	Net 71 333.56 372.45 357.62 311.93 393.02 377.99 364.73 354.39 327.79 352.48 331.65 323.21	% Error -0.726 -0.014 0.034 -0.182 0.133 0.797 -0.074 -5.496 4.894 -3.431 1.266 -4.939	Net 72 333.20 372.21 357.57 392.93 377.50 364.36 353.49 328.09 352.68 330.98 322.87	% Error -0.833 -0.078 0.020 -0.177 0.110 0.667 -0.174 -5.737 4.990 -3.374 1.062 -5.038	Net 73 333.91 372.79 357.67 311.94 393.10 378.33 365.49 354.60 328.30 353.35 331.75 323.58	% Error -0.622 0.077 0.048 -0.180 0.152 0.889 0.135 -5.439 5.058 -3.191 1.298 -4.830	Net 74 336.15 372.98 357.14 312.37 392.81 376.29 366.14 352.96 329.96 352.28 330.98 324.54	% Error 0.046 0.128 -0.102 -0.042 0.080 0.344 0.312 -5.878 5.587 -3.486 1.063 -4.548	Net 75 332.77 372.93 357.36 312.06 393.12 378.29 366.05 350.73 328.00 353.24 330.30 321.31	% Error -0.961 0.116 -0.038 -0.139 0.158 0.876 0.287 -6.473 4.961 -3.222 0.856 -5.496
Test Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 312.5 365 327.5 340 363	Net 71 333.56 372.45 357.62 311.93 393.02 377.99 364.73 354.39 327.79 352.48 331.65 323.21 356.01	% Error -0.726 -0.014 0.034 -0.182 0.133 0.797 -0.074 -5.496 4.894 -3.431 1.266 -4.939 -1.925	Net 72 333.20 372.21 357.57 311.95 392.93 377.50 364.36 353.49 328.09 328.09 352.68 330.98 322.87 355.18	% Error -0.833 -0.078 0.020 -0.177 0.110 0.667 -0.174 -5.737 4.990 -3.374 1.062 -5.038 -2.155	Net 73 333.91 372.79 357.67 311.94 393.10 378.33 365.49 354.60 328.30 353.35 331.75 323.58 356.63	% Error -0.622 0.077 0.048 -0.180 0.152 0.889 0.135 -5.439 5.058 -3.191 1.298 -4.830 -1.753	Net 74 336.15 372.98 357.14 312.37 392.81 376.29 366.14 352.96 329.96 329.96 352.28 330.98 324.54 354.32	% Error 0.046 0.128 -0.102 -0.042 0.080 0.344 0.312 -5.878 5.587 -3.486 1.063 -4.548 -2.392	Net 75 332.77 372.93 357.36 312.06 393.12 378.29 366.05 350.73 328.00 353.24 330.30 321.31 352.17	% Error -0.961 0.116 -0.038 -0.139 0.158 0.876 0.287 -6.473 4.961 -3.222 0.856 -5.496 -5.496 -2.984
Test Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 312.5 365 327.5 340 363 372.5	Net 71 333.56 372.45 357.62 311.93 393.02 377.99 364.73 354.39 327.79 352.48 331.65 323.21 356.01 377.51	% Error -0.726 -0.014 0.034 -0.182 0.133 0.797 -0.074 -5.496 4.894 -3.431 1.266 -4.939 -1.925 1.344	Net 72 333.20 372.21 357.57 311.95 392.93 377.50 364.36 353.49 328.09 352.68 330.98 322.87 355.18 376.92	% Error -0.833 -0.078 0.020 -0.177 0.110 0.667 -0.174 -5.737 4.990 -3.374 1.062 -5.038 -2.155 1.186	Net 73 333.91 372.79 357.67 311.94 393.10 378.33 365.49 354.60 328.30 353.35 331.75 323.58 356.63 377.93	% Error -0.622 0.077 0.048 -0.180 0.152 0.889 0.135 -5.439 5.058 -3.191 1.298 -4.830 -1.753 1.458	Net 74 336.15 372.98 357.14 312.37 392.81 376.29 366.14 352.96 352.96 352.28 330.98 324.54 354.32 375.93	% Error 0.046 0.128 -0.102 -0.042 0.080 0.344 0.312 -5.878 5.587 -3.486 1.063 -4.548 -2.392 0.921	Net 75 332.77 372.93 357.36 312.06 393.12 378.29 366.05 350.73 328.00 353.24 330.30 353.24 330.30 321.31 352.17 377.82	% Error -0.961 0.116 -0.038 -0.139 0.158 0.876 0.287 -6.473 4.961 -3.222 0.856 -5.496 -2.984 1.427
Test Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 312.5 365 327.5 340 363 372.5 367.5	Net 71 333.56 372.45 357.62 311.93 393.02 377.99 364.73 354.39 327.79 352.48 331.65 323.21 356.01 377.51 377.02	% Error -0.726 -0.014 0.034 -0.182 0.133 0.797 -0.074 -5.496 4.894 -3.431 1.266 -4.939 -1.925 1.344 2.590	Net 72 333.20 372.21 357.57 311.95 392.93 377.50 364.36 353.49 328.09 352.68 330.98 322.87 355.18 376.92 376.06	% Error -0.833 -0.078 0.020 -0.177 0.110 0.667 -0.174 -5.737 4.990 -3.374 1.062 -5.038 -2.155 1.186 2.330	Net 73 333.91 372.79 357.67 311.94 393.10 378.33 365.49 354.60 328.30 353.35 331.75 323.58 356.63 377.93 377.46	% Error -0.622 0.077 0.048 -0.180 0.152 0.889 0.135 -5.439 5.058 -3.191 1.298 -4.830 -1.753 1.458 2.709	Net 74 336.15 372.98 357.14 312.37 392.81 376.29 366.14 352.96 329.96 352.28 330.98 324.54 354.32 375.93 373.28	% Error 0.046 0.128 -0.102 -0.042 0.080 0.344 0.312 -5.878 5.587 -3.486 1.063 -4.548 -2.392 0.921 1.572	Net 75 332.77 372.93 357.36 312.06 393.12 378.29 366.05 350.73 328.00 353.24 330.30 321.31 352.17 377.82 372.88	% Error -0.961 0.116 -0.038 -0.139 0.158 0.876 0.287 -6.473 4.961 -3.222 0.856 -5.496 -2.984 1.427 1.463
Test Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 312.5 365 327.5 365 327.5 363 372.5 363 372.5 367.5	Net 71 333.56 372.45 357.62 311.93 393.02 377.99 364.73 354.39 327.79 352.48 331.65 323.21 356.01 377.51 377.02 Worst	% Error -0.726 -0.014 0.034 -0.182 0.133 0.797 -0.074 -5.496 4.894 -3.431 1.266 -4.939 -1.925 1.344 2.590 -5.496	Net 72 333.20 372.21 357.57 311.95 392.93 377.50 364.36 353.49 328.09 352.68 330.98 330.98 322.87 355.18 376.92 376.06 Worst	% Error -0.833 -0.078 0.020 -0.177 0.110 0.667 -0.174 -5.737 4.990 -3.374 1.062 -5.038 -2.155 1.186 2.330 -5.737	Net 73 333.91 372.79 357.67 311.94 393.10 378.33 365.49 354.60 328.30 353.35 331.75 323.58 356.63 377.93 377.46 Worst	% Error -0.622 0.077 0.048 -0.180 0.152 0.889 0.135 -5.439 5.058 -3.191 1.298 -4.830 -1.753 1.458 2.709 -5.439	Net 74 336.15 372.98 357.14 312.37 392.81 376.29 366.14 352.96 329.96 329.96 329.96 329.96 329.96 330.98 330.98 324.54 354.32 375.93 373.28 Worst	% Error 0.046 0.128 -0.102 -0.042 0.080 0.344 0.312 -5.878 5.587 -3.486 1.063 -4.548 -2.392 0.921 1.572 -5.878	Net 75 332.77 372.93 357.36 312.06 393.12 378.29 366.05 350.73 328.00 353.24 330.30 321.31 352.17 377.82 372.88 Worst	% Error -0.961 0.116 -0.038 -0.139 0.158 0.876 0.287 -6.473 4.961 -3.222 0.856 -5.496 -2.984 1.427 1.463 -6.473
Test Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 365 327.5 340 363 372.5 367.5	Net 71 333.56 372.45 357.62 311.93 393.02 377.99 364.73 354.39 327.79 352.48 331.65 323.21 356.01 377.51 377.02 Worst	% Error -0.726 -0.014 0.034 -0.182 0.133 0.797 -0.074 -5.496 4.894 -3.431 1.266 -4.939 -1.925 1.344 2.590 -5.496	Net 72 333.20 372.21 357.57 311.95 392.93 377.50 364.36 353.49 328.09 352.68 330.98 322.87 355.18 376.92 376.06 Worst	% Error -0.833 -0.078 0.020 -0.177 0.110 0.667 -0.174 -5.737 4.990 -3.374 1.062 -5.038 -2.155 1.186 2.330 -5.737	Net 73 333.91 372.79 357.67 311.94 393.10 378.33 365.49 354.60 328.30 353.35 331.75 323.58 356.63 377.93 377.46 Worst	% Error -0.622 0.077 0.048 -0.180 0.152 0.889 0.135 -5.439 5.058 -3.191 1.298 -4.830 -1.753 1.458 2.709 -5.439	Net 74 336.15 372.98 357.14 312.37 392.81 376.29 366.14 352.96 329.96 329.96 352.28 330.98 324.54 354.32 375.93 373.28 Worst	% Error 0.046 0.128 -0.102 0.080 0.344 0.312 -5.878 5.587 -3.486 1.063 -4.548 -2.392 0.921 1.572 -5.878	Net 75 332.77 372.93 357.36 312.06 393.12 378.29 366.05 350.73 328.00 353.24 330.30 321.31 352.17 377.82 372.88 Worst	% Error -0.961 0.116 -0.038 -0.139 0.158 0.876 0.287 -6.473 4.961 -3.222 0.856 -5.496 -2.984 1.427 1.463 -6.473
Test Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 365 327.5 340 363 372.5 367.5 367.5 Actual	Net 71 333.56 372.45 357.62 311.93 393.02 377.99 364.73 354.39 327.79 352.48 331.65 323.21 356.01 377.51 377.02 Worst	% Error -0.726 -0.014 0.034 -0.182 0.133 0.797 -0.074 -5.496 4.894 -3.431 1.266 -4.939 -1.925 1.344 2.590 -5.496	Net 72 333.20 372.21 357.57 311.95 392.93 377.50 364.36 353.49 328.09 352.68 330.98 322.87 355.18 376.92 376.06 Worst Net 77	% Error -0.833 -0.078 0.020 -0.177 0.110 0.667 -0.174 -5.737 4.990 -3.374 1.062 -5.038 -2.155 1.186 2.330 -5.737	Net 73 333.91 372.79 357.67 311.94 393.10 378.33 365.49 354.60 328.30 353.35 331.75 323.58 356.63 377.93 377.46 Worst	% Error -0.622 0.077 0.048 -0.180 0.152 0.889 0.135 -5.439 5.058 -3.191 1.298 -4.830 -1.753 1.458 2.709 -5.439	Net 74 336.15 372.98 357.14 312.37 392.81 376.29 366.14 352.96 329.96 352.28 330.98 324.54 354.32 375.93 373.28 Worst Net 79 246.22	% Error 0.046 0.128 -0.102 0.080 0.344 0.312 -5.878 5.587 -3.486 1.063 -4.548 -2.392 0.921 1.572 -5.878	Net 75 332.77 372.93 357.36 312.06 393.12 378.29 366.05 350.73 328.00 353.24 330.30 321.31 352.17 377.82 372.88 Worst Net 80 225.52	% Error -0.961 0.116 -0.038 -0.139 0.158 0.876 0.287 -6.473 4.961 -3.222 0.856 -5.496 -2.984 1.427 1.463 -6.473
Test Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 327.5 340 363 372.5 367.5 367.5 367.5	Net 71 333.56 372.45 357.62 311.93 393.02 377.99 364.73 354.39 327.79 352.48 331.65 323.21 356.01 377.51 377.02 Worst Net 76 331.49	% Error -0.726 -0.014 0.034 -0.182 0.133 0.797 -0.074 -5.496 -4.939 -1.925 1.344 2.590 -5.496 % Error -1.343	Net 72 333.20 372.21 357.57 311.95 392.93 377.50 364.36 353.49 328.09 352.68 330.98 322.87 355.18 376.92 376.06 Worst Net 77 330.99	% Error -0.833 -0.078 0.020 -0.177 0.110 0.667 -0.174 -5.737 4.990 -3.374 1.062 -5.038 -2.155 1.186 2.330 -5.737 % Error -1.492	Net 73 333.91 372.79 357.67 311.94 393.10 378.33 365.49 354.60 328.30 353.35 331.75 323.58 356.63 377.46 Worst Net 78 331.40	% Error -0.622 0.077 0.048 -0.180 0.152 0.889 0.135 -5.439 5.058 -3.191 1.298 -4.830 -1.753 1.458 2.709 -5.439	Net 74 336.15 372.98 357.14 312.37 392.81 376.29 366.14 352.96 329.96 352.28 330.98 324.54 354.32 375.93 373.28 Worst Net 79 310.92	% Error 0.046 0.128 -0.102 -0.042 0.080 0.344 0.312 -5.878 5.587 -3.486 1.063 -4.548 -2.392 0.921 1.572 -5.878 ***********************************	Net 75 332.77 372.93 357.36 312.06 393.12 378.29 366.05 350.73 328.00 353.24 330.30 321.31 352.17 377.82 372.88 Worst Net 80 335.16	% Error -0.961 0.116 -0.038 -0.139 0.158 0.876 0.287 -6.473 4.961 -3.222 0.856 -5.496 -2.984 1.427 1.463 -6.473
ata Test Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 312.5 365 327.5 340 363 372.5 367.5 367.5 367.5 367.5 363 372.5 363 372.5 363 372.5 363 372.5 363 372.5 363 372.5 363 372.5 363 372.5 363 372.5 363 372.5 365 375 365 375 327.5 340 375 365 375 365 375 365 375 327.5 340 375 365 375 367 367 367 367 367 375 367 367 367 375 367 367 367 367 375 367 367 367 367 375 367 367 367 375 367 367 375 367 367 375 367 367 375 367 375 367 375 375 375 375 375 375 375 37	Net 71 333.56 372.45 357.62 311.93 393.02 377.99 364.73 354.39 327.79 352.48 331.65 323.21 356.01 377.51 377.02 Worst Net 76 331.49 373.54	% Error -0.726 -0.014 0.034 -0.182 0.133 0.797 -0.074 -5.496 4.894 -3.431 1.266 -4.939 -1.925 1.344 2.590 -5.496 % Error -1.343 0.280	Net 72 333.20 372.21 357.57 311.95 392.93 377.50 364.36 353.49 328.09 352.68 330.98 322.87 355.18 376.06 Worst Net 77 330.99 374.28	% Error -0.833 -0.078 0.020 -0.177 0.110 0.667 -0.174 -5.737 4.990 -3.374 1.062 -5.038 -2.155 1.186 2.330 -5.737 % Error -1.492 0.479	Net 73 333.91 372.79 357.67 311.94 393.10 378.33 365.49 354.60 328.30 353.35 331.75 323.58 356.63 377.93 377.46 Worst Net 78 331.40 375.98	% Error -0.622 0.077 0.048 -0.180 0.152 0.889 0.135 -5.439 5.058 -3.191 1.298 -4.830 -1.753 1.458 2.709 -5.439 % Error -1.370 0.935	Net 74 336.15 372.98 357.14 312.37 392.81 376.29 366.14 352.96 329.96 352.28 330.98 324.54 324.54 323.75.93 373.28 Worst Net 79 310.92 359.50	% Error 0.046 0.128 -0.102 -0.042 0.080 0.344 0.312 -5.878 5.587 -3.486 1.063 -4.548 -2.392 0.921 1.572 -5.878 -5.878 -7.464 -3.491	Net 75 332.77 372.93 357.36 312.06 393.12 378.29 366.05 350.73 328.00 353.24 330.30 321.31 352.17 377.82 372.88 Worst Net 80 335.16 372.45	% Error -0.961 0.116 -0.038 -0.139 0.158 0.876 0.287 -6.473 4.961 -3.222 0.856 -5.496 -2.984 1.427 1.463 -6.473 *6.473 *6.473
Data Training Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 312.5 365 327.5 340 363 372.5 367.5 Actual 336 372.5 357.5	Net 71 333.56 372.45 357.62 311.93 393.02 377.99 364.73 354.39 327.79 352.48 331.65 323.21 356.01 377.51 377.02 Worst Net 76 331.49 373.54 357.23	% Error -0.726 -0.014 0.034 -0.182 0.133 0.797 -0.074 -5.496 -4.939 -1.925 1.344 2.590 -5.496 % Error -1.343 0.280 -0.074	Net 72 333.20 372.21 357.57 311.95 392.93 377.50 364.36 353.49 328.09 352.68 330.98 322.87 355.18 376.92 376.06 Worst Net 77 330.99 374.28 357.15	% Error -0.833 -0.078 0.020 -0.177 0.110 0.667 -0.174 -5.737 4.990 -3.374 1.062 -5.038 -2.155 1.186 2.330 -5.737 % Error -1.492 0.479 -0.097	Net 73 333.91 372.79 357.67 311.94 393.10 378.33 365.49 354.60 328.30 353.35 331.75 323.58 356.63 377.93 377.46 Worst Net 78 331.40 375.98 357.19	% Error -0.622 0.077 0.048 -0.180 0.152 0.889 0.135 -5.439 5.058 -3.191 1.298 -4.830 -1.753 1.458 2.709 -5.439 % Error -1.370 0.935 -0.087	Net 74 336.15 372.98 357.14 312.37 392.81 376.29 366.14 352.96 329.96 352.28 330.98 324.54 354.32 375.93 373.28 Worst Net 79 310.92 359.50 353.16	% Error 0.046 0.128 -0.102 -0.042 0.080 0.344 0.312 -5.878 5.587 -3.486 1.063 -4.548 -2.392 0.921 1.572 -5.878 % Error -7.464 -3.491 -1.213	Net 75 332.77 372.93 357.36 312.06 393.12 378.29 366.05 350.73 328.00 353.24 330.30 321.31 352.17 377.82 372.88 Worst Net 80 335.16 372.45	% Error -0.961 0.116 -0.038 -0.139 0.158 0.876 0.287 -6.473 4.961 -3.222 0.856 -5.496 -2.984 1.427 1.463 -6.473 % Error -0.249 -0.013 0.013
ng Data Test Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 312.5 365 327.5 340 363 372.5 367.5 367.5 372.5 367.5 375 312.5 365 375 365 375 375 312.5 365 375 312.5 365 375 312.5 365 375 312.5 365 375 312.5 365 375 312.5 312.5 375 312.5 375 312.5 312.5 375 312.5 375 312.5 375 312.5 375 312.5 375 312.5 312.5 312.5 375 312.5	Net 71 333.56 372.45 357.62 311.93 393.02 377.99 364.73 354.39 327.79 352.48 331.65 323.21 356.01 377.51 377.02 Worst Net 76 331.49 373.54 357.23 311.76	% Error -0.726 -0.014 0.034 -0.182 0.133 0.797 -0.074 -5.496 4.894 -3.431 1.266 -4.939 -1.925 1.344 2.590 -5.496 % Error -1.343 -0.280 -0.074 -0.286	Net 72 333.20 372.21 357.57 311.95 392.93 377.50 364.36 353.49 328.09 352.68 330.98 322.87 355.18 376.92 376.06 Worst Net 77 330.99 374.28 357.15 311.62	% Error -0.833 -0.078 0.020 -0.177 0.110 0.667 -0.174 -5.737 4.990 -3.374 1.062 -5.038 -2.155 1.186 2.330 -5.737 % Error -1.492 0.479 -0.097 -0.283	Net 73 333.91 372.79 357.67 311.94 393.10 378.33 365.49 354.60 328.30 353.35 331.75 323.58 356.63 377.93 377.46 Worst Net 78 331.40 375.98 357.19 311.23	% Error -0.622 0.077 0.048 -0.180 0.152 0.889 0.135 -5.439 5.058 -3.191 1.298 -4.830 -1.753 1.458 2.709 -5.439 % Error -1.370 0.935 -0.087 -0.406	Net 74 336.15 372.98 357.14 312.37 392.81 376.29 366.14 352.96 352.96 352.28 330.98 324.54 354.32 375.93 373.28 Worst Net 79 310.92 359.50 353.16 312.63	% Error 0.046 0.128 -0.102 -0.042 0.080 0.344 0.312 -5.878 5.587 -3.486 1.063 -4.548 -2.392 0.921 1.572 -5.878 % Error -7.464 -3.491 -1.213 0.043	Net 75 332.77 372.93 357.36 312.06 393.12 378.29 366.05 350.73 328.00 353.24 330.30 321.31 352.17 377.82 372.88 Worst Net 80 335.16 372.45 357.55 312.31	% Error -0.961 0.116 -0.038 -0.139 0.158 0.876 0.287 -6.473 4.961 -3.222 0.856 -5.496 -2.984 1.427 1.463 -6.473 % Error -0.249 -0.013 0.013 -0.062
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raining Data Training Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 365 327.5 365 327.5 365 327.5 365 327.5 365 327.5 365 327.5 365 327.5 365 327.5 365 327.5 365 327.5 365 327.5 365 327.5 365 375 365 375 365 327.5 365 375 367 5 375 375 375 375 375 375 375	Net 71 333.56 372.45 357.62 311.93 393.02 377.99 364.73 354.39 327.79 352.48 331.65 323.21 376.01 377.51 377.02 Worst Net 76 331.49 373.54 357.23 311.76 393.60 380.06	% Error -0.726 -0.014 0.034 -0.182 0.133 0.797 -0.074 -5.496 4.894 -3.431 1.266 -4.939 -1.925 1.344 2.590 -5.496 % Error -1.343 0.280 -0.074	Net 72 333.20 372.21 357.57 311.95 392.93 377.50 364.36 353.49 328.09 352.68 330.98 330.98 322.87 355.18 376.92 376.06 Worst Net 77 330.99 374.28 357.15 311.62 394.09 381.90	% Error -0.833 -0.078 0.020 -0.177 0.110 0.667 -0.174 -5.737 4.990 -3.374 1.062 -5.038 -2.155 1.186 2.330 -5.737 % Error -1.492 0.479 -0.097 -0.283 0.404 1.840	Net 73 333.91 372.79 357.67 311.94 393.10 378.33 365.49 354.60 328.30 353.35 331.75 323.58 356.63 377.93 377.46 Worst Net 78 331.40 375.98 357.19 311.23 394.64 385.47	% Error -0.622 0.077 0.048 -0.180 0.152 0.889 0.135 -5.439 5.058 -3.191 1.298 -4.830 -1.753 1.458 2.709 -5.439 % Error -1.370 0.935 -0.087 -0.406 0.545 2.793	Net 74 336.15 372.98 357.14 312.37 392.81 376.29 366.14 352.96 329.96 329.96 329.96 322.54 330.98 324.54 354.32 375.93 373.28 Worst Net 79 310.92 359.50 353.16 312.63 387.63 363.37	% Error 0.046 0.128 -0.102 -0.042 0.080 0.344 0.312 -5.878 5.587 -3.486 1.063 -4.548 -2.392 0.921 1.572 -5.878 % Error -7.464 -3.491 -1.213 0.043 -1.241 -3.102	Net 75 332.77 372.93 357.36 312.06 393.12 378.29 366.05 350.73 328.00 353.24 330.30 321.31 352.17 377.82 372.88 Worst Net 80 335.16 372.45 357.55 312.31 392.57 375.99	% Error -0.961 0.116 -0.038 -0.139 0.158 0.876 0.287 -6.473 4.961 -3.222 0.856 -5.496 -2.984 1.427 1.463 -6.473 % Error -0.249 -0.013 0.013 -0.013 0.013 0.013 0.013
Training Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 365 327.5 340 363 372.5 367.5 367.5 367.5 367.5 375.5 327.5 367.5 375.5 327.5 367.5 375.5 327.5 367.5 375.5 3	Net 71 333.56 372.45 357.62 311.93 393.02 377.99 364.73 354.39 327.79 352.48 331.65 323.21 377.51 377.51 377.02 Worst Net 76 331.49 373.54 357.23 311.76 393.60 380.06 367.02	% Error -0.726 -0.014 0.034 -0.182 0.133 0.797 -0.074 -5.496 4.894 -3.431 1.266 -4.939 -1.925 1.344 2.590 -5.496 % Error -1.343 0.280 -0.074 -0.236 0.281 1.349 0.553	Net 72 333.20 372.21 357.57 311.95 392.93 377.50 364.36 353.49 328.09 352.68 330.98 322.87 355.18 376.92 376.06 Worst Net 77 330.99 374.28 357.15 311.62 394.09 381.90 368.72	% Error -0.833 -0.078 0.020 -0.177 0.110 0.667 -0.174 -5.737 4.990 -3.374 1.062 -5.038 -2.155 1.186 2.330 -5.737 % Error -1.492 0.479 -0.097 -0.283 0.404 1.840 1.019	Net 73 333.91 372.79 357.67 311.94 393.10 378.33 365.49 354.60 328.30 353.35 331.75 323.58 356.63 377.93 377.46 Worst Net 78 331.40 375.98 357.19 311.23 394.64 385.47 371.38	% Error -0.622 0.077 0.048 -0.180 0.152 0.889 0.135 -5.439 5.058 -3.191 1.298 -4.830 -1.753 1.458 2.709 -5.439 * * 0.935 -0.087 -0.406 0.545 2.793 1.749	Net 74 336.15 372.98 357.14 312.37 392.81 376.29 366.14 352.96 329.96 329.96 352.28 330.98 324.54 354.32 375.93 373.28 Worst Net 79 310.92 359.50 355.16 312.63 387.63 363.37 345.96	% Error 0.046 0.128 -0.102 0.080 0.344 0.312 -5.878 5.587 -3.486 1.063 -4.548 -2.392 0.921 1.572 -5.878 % Error -7.464 -3.491 -1.213 0.043 -1.241 -3.102 -5.217	Net 75 332.77 372.93 357.36 312.06 393.12 378.29 366.05 350.73 328.00 353.24 330.30 321.31 352.17 377.82 372.88 Worst Net 80 335.16 372.45 357.55 312.31 392.57 375.99 364.86	% Error -0.961 0.116 -0.038 -0.139 0.158 0.876 0.287 -6.473 4.961 -3.222 0.856 -5.496 -2.984 1.427 1.463 -6.473 % Error -0.249 -0.013 -0.062 0.018 0.264 -0.038
Training Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 365 327.5 340 363 372.5 367.5 367.5 367.5 327.5 367.5 367.5 327.5 367.5 327.5 367.5 327.5 367.5 367.5 375 367.5 375 367.5 375 367.5 375 367.5 375 367.5 375 367.5 375 367.5 375 367.5 375 367.5 375 367.5 375 367.5 375 367.5 375 367.5 375 367.5 375 367.5 375 367.5 375 367.5 375 367.5 375 375 375 375 375 365 375 375 375 375 375 375 375 37	Net 71 333.56 372.45 357.62 311.93 393.02 377.99 364.73 354.39 327.79 352.48 331.65 323.21 356.01 377.51 377.02 Worst Net 76 331.49 373.54 357.23 311.76 393.60 380.06 367.02 351.38	% Error -0.726 -0.014 0.034 -0.182 0.133 0.797 -0.074 -5.496 4.894 -3.431 1.266 -4.939 -1.925 1.344 2.590 -5.496 % Error -1.343 0.280 -0.074 -0.236 0.281 1.349 0.553 -6.299	Net 72 333.20 372.21 357.57 311.95 392.93 377.50 364.36 353.49 328.09 352.68 30.98 322.87 355.18 376.92 376.06 Worst Net 77 330.99 374.28 357.15 311.62 394.09 381.90 368.72 352.60	% Error -0.833 -0.078 0.020 -0.177 0.110 0.667 -0.174 -5.737 4.990 -3.374 1.062 -5.038 -2.155 1.186 2.330 -5.737 % Error -1.492 0.479 -0.097 -0.283 0.404 1.840 1.019 -5.973	Net 73 333.91 372.79 357.67 311.94 393.10 378.33 365.49 354.60 328.30 353.35 331.75 323.58 356.63 377.93 377.46 Worst Net 78 331.40 375.98 357.19 311.23 394.64 385.47 371.38 355.21	% Error -0.622 0.077 0.048 -0.180 0.152 0.889 0.135 -5.439 5.058 -3.191 1.298 -4.830 -1.753 1.458 2.709 -5.439 * Error -1.370 0.935 -0.087 -0.406 0.545 2.793 1.749 -5.277	Net 74 336.15 372.98 357.14 312.37 392.81 376.29 366.14 352.96 329.96 352.28 330.98 324.54 354.32 375.93 373.28 Worst Net 79 310.92 359.50 353.16 312.63 387.63 363.37 345.96 330.02	% Error 0.046 0.128 -0.102 0.080 0.344 0.312 -5.878 5.587 -3.486 1.063 -4.548 -2.392 0.921 1.572 -5.878 % Error -7.464 -3.491 -1.213 0.043 -1.241 -3.102 -5.217 -11.994	Net 75 332.77 372.93 357.36 312.06 393.12 378.29 366.05 350.73 328.00 353.24 330.30 321.31 352.17 377.82 372.88 Worst Net 80 335.16 372.45 357.55 312.31 392.57 375.99 364.86 360.09	% Error -0.961 0.116 -0.038 -0.139 0.158 0.876 0.287 -6.473 4.961 -3.222 0.856 -5.496 -2.984 1.427 1.463 -6.473 % Error -0.249 -0.013 0.013 -0.062 0.018 0.264 -0.038 -3.975
Training Data Test Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 312.5 365 327.5 365 327.5 363 372.5 363 372.5 367.5 312.5 327.5 365 375.5 312.5 327.5 327.5 365 375.5 312.5 375.5 312.5 375.5 312.5 375.5 312.5 375.5 312.5 375.5 312.5 365.5 375.5 312.5 365.5 375.5 312.5 365.5 375.5 312.5 365.5 375.5 312.5 365.5 375.5 312.5 365.5 375.5 312.5 365.5 375.5 312.5 365.5 375.5 375.5 365.5 375.5 365.5 375.5 365.5 375.5 365.5 375.5	Net 71 333.56 372.45 357.62 311.93 393.02 377.99 364.73 354.39 327.79 352.48 331.65 323.21 356.01 377.51 377.02 Worst Net 76 331.49 373.54 357.23 311.76 393.60 380.06 367.02 351.38 327.01	% Error -0.726 -0.014 0.034 -0.182 0.133 0.797 -0.074 -5.496 4.894 -3.431 1.266 -4.939 -1.925 1.344 2.590 -5.496 % Error -1.343 0.280 -0.074 -0.236 0.281 1.349 0.553 -6.299 4.643	Net 72 333.20 372.21 357.57 311.95 392.93 377.50 364.36 353.49 328.09 352.68 330.98 322.87 355.18 376.92 376.06 Worst Net 77 330.99 374.28 357.15 311.62 394.09 381.90 381.90 368.72 352.60	% Error -0.833 -0.078 0.020 -0.177 0.110 0.667 -0.174 -5.737 4.990 -3.374 1.062 -5.038 -2.155 1.186 2.330 -5.737 % Error -1.492 0.479 -0.097 -0.283 0.404 1.840 1.019 -5.737	Net 73 333.91 372.79 357.67 311.94 393.10 378.33 365.49 354.60 328.30 353.35 331.75 323.58 356.63 377.93 377.46 Worst Net 78 331.40 375.98 357.19 311.23 394.64 385.47 371.38 355.21 326.82	% Error -0.622 0.077 0.048 -0.180 0.152 0.889 0.135 -5.439 5.058 -3.191 1.298 -4.830 -1.753 1.458 2.709 -5.439 % Error -1.370 0.935 -0.087 -0.406 0.545 2.793 1.749 -5.277 4.582	Net 74 336.15 372.98 357.14 312.37 392.81 376.29 366.14 352.96 329.96 352.28 330.98 324.54 324.54 324.54 324.54 375.93 373.28 Worst Net 79 310.92 359.50 353.16 312.63 387.63 363.37 345.96 330.02 316.50	% Error 0.046 0.128 -0.102 -0.042 0.080 0.344 0.312 -5.878 5.587 -3.486 1.063 -4.548 -2.392 0.921 1.572 -5.878 -3.491 -1.213 0.043 -1.241 -3.102 -5.217 -11.994 1.281	Net 75 332.77 372.93 357.36 312.06 393.12 378.29 366.05 350.73 328.00 353.24 330.30 321.31 352.17 377.82 372.88 Worst Net 80 335.16 372.45 357.55 312.31 392.57 375.99 364.86 360.09 327.37	% Error -0.961 0.116 -0.038 -0.139 0.158 0.876 0.287 -6.473 4.961 -3.222 0.856 -5.496 -2.984 1.427 1.463 -6.473 .984 0.013 -0.013 0.013 -0.062 0.018 0.264 -0.038 -3.975 4.760
a Training Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 312.5 365 327.5 340 363 372.5 367.5 367.5 312.5 367.5 312.5 392.5 375 312.5 365 375 312.5 365 375 312.5 365 375 375 365 375 375 365 375 375 365 375 375 375 365 375 375 375 375 375 365 375 375 375 375 375 375 375 37	Net 71 333.56 372.45 357.62 311.93 393.02 377.99 364.73 354.39 327.79 352.48 331.65 323.21 356.01 377.51 377.02 Worst Net 76 331.49 373.54 357.23 311.76 393.60 380.06 367.02 351.38 327.01 354.78	% Error -0.726 -0.014 0.034 -0.182 0.133 0.797 -0.074 -5.496 -4.939 -1.925 1.344 2.590 -5.496 % Error -1.343 0.280 -0.074 -0.236 0.281 1.349 0.553 -6.299 4.643 -2.801	Net 72 333.20 372.21 357.57 311.95 392.93 377.50 364.36 353.49 328.09 352.68 330.98 322.87 355.18 376.92 376.06 Worst Net 77 330.99 374.28 357.15 311.62 394.09 368.72 352.60 326.88 356.59	% Error -0.833 -0.078 0.020 -0.177 0.110 0.667 -0.174 -5.737 4.990 -3.374 1.062 -5.038 -2.155 1.186 2.330 -5.737 % Error -1.492 0.479 -0.097 -0.283 0.404 1.840 1.019 -5.973 4.603 -2.305	Net 73 333.91 372.79 357.67 311.94 393.10 378.33 365.49 354.60 328.30 353.35 331.75 323.58 356.63 377.93 377.46 Worst Net 78 331.40 375.98 357.19 311.23 394.64 385.47 371.38 355.21 326.82 357.40	% Error -0.622 0.077 0.048 -0.180 0.152 0.889 0.135 -5.439 5.058 -3.191 1.298 -4.830 -1.753 1.458 2.709 -5.439 % Error -1.370 0.935 -0.087 -0.406 0.545 2.793 1.749 -5.277 4.582 -2.081	Net 74 336.15 372.98 357.14 312.37 392.81 376.29 366.14 352.96 329.96 352.28 330.98 324.54 324.54 375.93 373.28 Worst Net 79 310.92 359.50 353.16 312.63 387.63 363.37 345.96 330.02 316.50 358.69	% Error 0.046 0.128 -0.102 0.080 0.344 0.312 -5.878 5.587 -3.486 1.063 -4.548 -2.392 0.921 1.572 -5.878 -3.491 -1.213 0.043 -1.241 -3.102 -5.217 -1.1.994 1.281 -1.729	Net 75 332.77 372.93 357.36 312.06 393.12 378.29 366.05 350.73 328.00 353.24 330.30 321.31 352.17 377.82 372.88 Worst Net 80 335.16 372.45 357.55 312.31 392.57 375.99 364.86 360.09 327.37 354.10	% Error -0.961 0.116 -0.038 -0.139 0.158 0.876 0.287 -6.473 4.961 -3.222 0.856 -5.496 -2.984 1.427 1.463 -6.473 .02984 0.013 -0.249 -0.013 0.013 -0.062 0.018 0.264 -0.038 -3.975 4.760 -2.985
hata Training Data Test Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 312.5 365 327.5 340 363 372.5 367.5 312.5 367.5 312.5 327.5 312.5 327.5 312.5 326 375 312.5 327.5 312.5 327.5 312.5 327.5	Net 71 333.56 372.45 357.62 311.93 393.02 377.99 364.73 354.39 327.79 352.48 331.65 323.21 356.01 377.51 377.02 Worst Net 76 331.49 373.54 357.23 311.76 393.60 380.06 367.02 351.38 327.01 354.78 330.64	% Error -0.726 -0.014 0.034 -0.182 0.133 0.797 -0.074 -5.496 -4.939 -1.925 1.344 2.590 -5.496 % Error -1.343 0.280 -0.074 -5.496 % Error -1.343 0.553 -6.299 4.643 -2.801 0.958	Net 72 333.20 372.21 357.57 311.95 392.93 377.50 364.36 353.49 328.09 352.68 322.87 355.18 376.92 376.06 Worst Net 77 330.99 374.28 357.15 311.62 394.09 381.90 368.72 352.60 326.88 356.59 331.30	% Error -0.833 -0.078 0.020 -0.177 0.110 0.667 -0.174 -5.737 4.990 -3.374 1.062 -5.038 -2.155 1.186 2.330 -5.737 % Error -1.492 0.479 -0.097 -0.283 0.404 1.840 1.019 -5.973 4.603 -2.305 1.160	Net 73 333.91 372.79 357.67 311.94 393.10 378.33 365.49 354.60 328.30 353.35 331.75 323.58 356.63 377.93 377.46 Worst Net 78 331.40 375.98 357.19 311.23 394.64 385.47 371.38 355.21 326.82 357.40 333.63	% Error -0.622 0.077 0.048 -0.180 0.152 0.889 0.135 -5.439 5.058 -3.191 1.298 -4.830 -1.753 1.458 2.709 -5.439 % Error -1.370 0.935 -0.087 -0.406 0.545 2.793 1.749 -5.277 4.582 -2.081 1.871	Net 74 336.15 372.98 357.14 312.37 392.81 376.29 366.14 352.96 352.96 352.28 330.98 324.54 354.32 375.93 373.28 Worst Net 79 310.92 359.50 353.16 312.63 387.63 363.37 345.96 330.02 316.50 358.69 317.28	% Error 0.046 0.128 -0.102 -0.042 0.080 0.344 0.312 -5.878 5.587 -3.486 1.063 -4.548 -2.392 0.921 1.572 -5.878 % Error -7.464 -3.491 -1.213 0.043 -1.241 -3.102 -5.217 -1.994 1.281 -1.729 -3.119	Net 75 332.77 372.93 357.36 312.06 393.12 378.29 366.05 350.73 328.00 353.24 330.30 321.31 352.17 377.82 372.88 Worst Net 80 335.16 372.45 357.55 312.31 392.57 375.99 364.86 360.09 327.37 354.10 334.53	% Error -0.961 0.116 -0.038 -0.139 0.158 0.876 0.287 -6.473 4.961 -3.222 0.856 -5.496 -2.984 1.427 1.463 -6.473 % Error -0.249 -0.013 0.013 -0.062 0.018 0.264 -0.038 -3.975 4.760 -2.985 2.145
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est Data Training Data Test Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 312.5 365 327.5 340 363 372.5 367.5 312.5 367.5 312.5 367.5 312.5 357.5 312.5 365 375.5 312.5 365 375.5 312.5 365 375.5 312.5 365 375.5 312.5 365 375.5 312.5 365 375.5 312.5 365.5 375.5 312.5 365.5 375.5 312.5 365.5 375.5 312.5 365.5 375.5 312.5 365.5 375.5 312.5 365.5 375.5 312.5 365.5 375.5 312.5 365.5 375.5 312.5 365.5 375.5 312.5 365.5 375.5 312.5 365.5 375.5 312.5 365.5 375.5 312.5 365.5 375.5 312.5 365.5 375.5	Net 71 333.56 372.45 357.62 311.93 393.02 377.99 364.73 354.39 327.79 352.48 331.65 323.21 356.01 377.51 377.02 Worst Net 76 331.49 373.54 375.45	% Error -0.726 -0.014 0.034 -0.182 0.133 0.797 -0.074 -5.496 4.894 -3.431 1.266 -4.939 -1.925 1.344 2.590 -5.496 % Error -1.343 0.280 -0.074 -0.236 0.236 0.281 1.349 0.553 -6.299 4.643 -2.801 0.958 -5.749 -2.706	Net 72 333.20 372.21 357.57 311.95 392.93 377.50 364.36 353.49 328.09 328.09 352.68 330.98 322.87 355.18 376.92 376.06 Worst Net 77 330.99 374.28 357.15 311.62 394.09 381.90 368.72 352.60 326.88 356.59 331.30 320.21 354.90 355.48 356.59 331.30 320.21 354.90 355.48 357.45 311.62 352.60 326.88 356.59 31.30 320.21 354.80 354.80 354.80 354.80 354.80 354.80 355.48 355.48 356.59 331.30 320.21 354.80 354.80 356.88 356.59 331.30 356.48 356.59 357.48	% Error -0.833 -0.078 0.020 -0.177 0.110 0.667 -0.174 -5.737 4.990 -3.374 1.062 -5.038 -2.155 1.186 2.330 -5.737 % Error -1.492 0.479 -0.097 -0.283 0.404 1.840 1.019 -5.973 4.603 -2.305 1.160 -5.820 -2.260	Net 73 333.91 372.79 357.67 311.94 393.10 378.33 365.49 354.60 328.30 353.35 331.75 323.58 356.63 377.93 377.46 Worst Net 78 331.40 375.98 357.19 311.23 394.64 385.47 371.38 355.21 326.82 357.40 333.63 20.42 358.20	% Error -0.622 0.077 0.048 -0.180 0.152 0.889 0.135 -5.439 5.058 -3.191 1.298 -4.830 -1.753 1.458 2.709 -5.439 % Error -1.370 0.935 -0.087 -0.406 0.545 2.793 1.749 -5.277 4.582 -2.081 1.871 1.871 1.871 1.5758	Net 74 336.15 372.98 357.14 312.37 392.81 376.29 366.14 352.96 329.96 329.96 329.96 329.96 324.54 354.32 375.93 373.28 Worst Net 79 310.92 359.50 353.16 312.63 363.37 345.96 330.02 316.50 358.69 317.28 307.74 329.11	% Error 0.046 0.128 -0.102 -0.042 0.080 0.344 0.312 -5.878 5.587 -3.486 1.063 -4.548 -2.392 0.921 1.572 -5.878 % Error -7.464 -3.491 -1.213 0.043 -1.241 -3.102 -5.217 -11.994 1.281 -1.729 -3.119 -9.489 -9.337	Net 75 332.77 372.93 357.36 312.06 393.12 378.29 366.05 350.73 328.00 353.24 330.30 353.24 330.30 353.24 330.30 353.24 337.88 Worst Net 80 372.45 357.55 312.31 392.57 375.99 364.86 360.09 327.37 354.10 345.35 327.35 362.12	% Error -0.961 0.116 -0.038 -0.139 0.158 0.876 0.287 -6.473 4.961 -3.222 0.856 -5.496 -2.984 1.427 1.463 -6.473 % Error -0.249 -0.013 0.013 -0.062 0.018 0.264 -0.038 -3.975 4.760 -2.985 -3.719 -0.241
Test Data Training Data Test Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 365 327.5 365 327.5 365 327.5 367.5 367.5 372.5 367.5 312.5 367.5 312.5 357.5 312.5 365 375.5 312.5 365 375.5 312.5 365 375.5 312.5 365 375.5 312.5 365 375.5 312.5 365 375.5 312.5 365 375.5 365.5 375.5 375.5 365.5 375.5 375.5 365.5 375.5 327.5 365.5 327.5 3	Net 71 333.56 372.45 357.62 311.93 393.02 377.99 364.73 354.39 327.79 352.48 331.65 323.21 356.01 377.51 377.02 Worst Net 76 331.49 373.54 357.23 311.76 393.60 367.02 351.38 327.01 354.78 330.64 320.45 353.18 320.45 354.38 320.45 354.38 320.45 353.18 320.45 353.18 320.45 353.18 320.45 353.18 320.45 353.18 320.45 353.18 320.45 353.18 320.45 353.18 320.45	% Error -0.726 -0.014 0.034 -0.182 0.133 0.797 -0.074 -5.496 4.894 -3.431 1.266 -4.939 -1.925 1.344 2.590 -5.496 % Error -1.343 0.280 -0.074 -5.496 % Error -1.343 0.280 -0.074 -5.496 % Error -1.343 0.281 1.349 0.553 -6.299 4.643 -2.801 0.958 -5.749 -2.706	Net 72 333.20 372.21 357.57 311.95 392.93 377.50 364.36 353.49 328.09 352.68 330.98 322.87 355.18 376.92 376.06 Worst Net 77 330.99 374.28 357.15 311.62 394.09 374.28 357.162 394.09 381.90 368.72 352.60 326.88 356.59 331.30 320.21 354.80 320.21 354.80	% Error -0.833 -0.078 0.020 -0.177 0.110 0.667 -0.174 -5.737 4.990 -3.374 1.062 -5.038 -2.155 1.186 2.330 -5.737 % Error -1.492 0.479 -0.097 -0.283 0.404 1.840 1.019 -5.973 4.603 -2.305 1.160 -5.820 -2.260	Net 73 333.91 372.79 357.67 311.94 393.10 378.33 365.49 354.60 328.30 353.35 331.75 323.58 356.63 377.93 377.46 Worst Net 78 331.40 375.98 357.19 311.23 394.64 385.47 371.38 355.21 326.82 357.40 333.63 320.42 385.80 125.21 326.82 357.40 333.63 320.42 385.80 125.21 326.82 357.40 333.63 320.42 385.80 125.21 326.82 357.40 333.63 320.42 385.80 125.21 326.82 357.40 333.63 320.42 385.80	% Error -0.622 0.077 0.048 -0.180 0.152 0.889 0.135 -5.439 5.058 -3.191 1.298 -4.830 -1.753 1.458 2.709 -5.439 */ */ */ */ */ */ */ */ */ */ */ */ */	Net 74 336.15 372.98 357.14 312.37 392.81 376.29 366.14 352.96 329.96 329.96 352.28 330.98 324.54 354.32 375.93 373.28 Worst Net 79 310.92 359.50 353.16 312.63 387.63 363.37 345.96 330.02 316.50 358.69 317.28 307.74 329.11 366.10	% Error 0.046 0.128 -0.102 -0.042 0.080 0.344 0.312 -5.878 5.587 -3.486 1.063 -4.548 -2.392 0.921 1.572 -5.878 % Error -7.464 -3.491 -1.213 0.043 -1.241 -3.102 -5.217 -11.994 1.281 -1.729 -3.119 -9.489 -9.337 -1.710	Net 75 332.77 372.93 357.36 312.06 393.12 378.29 366.05 350.73 328.00 353.24 330.30 321.31 352.17 377.82 372.88 Worst Net 80 335.16 372.45 357.55 312.31 392.57 375.99 364.86 360.09 327.37 354.10 334.53 327.35 362.12 377.09	% Error -0.961 0.116 -0.038 -0.139 0.158 0.876 0.287 -6.473 4.961 -3.222 0.856 -5.496 -2.984 1.427 1.463 -6.473 .013 0.013 -0.049 -0.013 0.013 -0.264 -0.038 -3.975 4.760 -2.985 2.145 -3.719
Test Data Training Data Test Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 365 327.5 340 363 372.5 367.5 367.5 375.5 367.5 375.5 312.5 367.5 312.5 365 375.5 312.5 365 375.5 312.5 365 375.5 312.5 365 375.5 312.5 365 375.5 312.5 365.5 375.5 312.5 367.5 312.5 367.5 312.5 367.5 312.5 367.5 312.5 367.5 312.5 367.5 312.5 367.5 312.5 367.5 312.5 365.5 375.5 312.5 367.5 312.5 367.5 312.5 365.5 375.5 312.5 365.5 375.5 312.5 367.5 312.5 365.5 375.5 312.5 365.5 375.5 312.5 365.5 375.5 312.5 365.5 375.5 312.5 367.5 312.5 365.5 375.5 312.5 365.5 375.5 312.5 367.5 312.5 375.5 312.5 375.5 312.5 375.5 375.5 312.5 375.	Net 71 333.56 372.45 357.62 311.93 393.02 377.99 364.73 354.39 327.79 352.48 331.65 323.21 356.01 377.51 377.02 Worst Net 76 331.49 373.54 357.23 311.76 393.60 380.06 380.06 367.02 351.38 327.01 354.78 330.64 320.45 353.18 380.00	% Error -0.726 -0.014 0.034 -0.182 0.133 0.797 -0.074 -5.496 4.894 -3.431 1.266 -4.939 -1.925 1.344 2.590 -5.496 % Error -1.343 0.280 -0.074 -0.236 0.281 1.349 0.553 -6.299 4.643 -2.801 0.958 -5.749 -2.706 2.0212	Net 72 333.20 372.21 357.57 311.95 392.93 377.50 364.36 353.49 328.09 352.68 30.98 322.87 355.18 376.92 376.06 Worst Net 77 330.99 374.28 357.15 311.62 394.09 381.90 368.72 352.60 326.88 356.59 331.30 320.21 354.80 382.28	% Error -0.833 -0.078 0.020 -0.177 0.110 0.667 -0.174 -5.737 4.990 -3.374 1.062 -5.038 -2.155 1.186 2.330 -5.737 % Error -1.492 0.479 -0.097 -0.283 0.404 1.840 1.019 -5.973 4.603 -2.305 1.160 -5.820 -2.260 2.624	Net 73 333.91 372.79 357.67 311.94 393.10 378.33 365.49 354.60 328.30 353.35 331.75 323.58 356.63 377.93 377.46 Worst Net 78 331.40 375.98 357.19 311.23 394.64 385.47 371.38 355.21 326.82 357.40 333.63 320.42 358.20 385.81 329.454	% Error -0.622 0.077 0.048 -0.180 0.152 0.889 0.135 -5.439 5.058 -3.191 1.298 -4.830 -1.753 1.458 2.709 -5.439 * * 0.935 -0.087 -0.406 0.545 2.793 1.749 -5.277 4.582 -2.081 1.871 -5.758 -1.324 3.574	Net 74 336.15 372.98 357.14 312.37 392.81 376.29 366.14 352.96 329.96 352.28 330.98 324.54 354.32 375.93 373.28 Worst Net 79 310.92 359.50 353.16 312.63 387.63 363.37 345.96 330.02 316.50 358.69 317.28 307.74 329.11 366.10	% Error 0.046 0.128 -0.102 -0.042 0.080 0.344 0.312 -5.878 5.587 -3.486 1.063 -4.548 -2.392 0.921 1.572 -5.878 % Error -7.464 -3.491 -1.213 0.043 -1.241 -3.102 -5.217 -11.994 1.281 -1.729 -3.119 -9.489 -9.337 -1.719 -9.489 -9.337 -1.719	Net 75 332.77 372.93 357.36 312.06 393.12 378.29 366.05 350.73 328.00 353.24 330.30 321.31 352.17 377.82 372.88 Worst Net 80 335.16 372.45 357.55 312.31 392.57 375.99 364.86 360.09 327.37 354.10 334.53 327.35 362.12 377.09	% Error -0.961 0.116 -0.038 -0.139 0.158 0.876 0.287 -6.473 4.961 -3.222 0.856 -5.496 -2.984 1.427 1.463 -6.473 .013 0.013 -0.062 0.013 -0.062 0.018 0.264 -0.038 -3.975 4.760 -2.985 2.145 -3.719 -0.241 1.232
Test Data Training Data Test Data Training Data	Actual 336 372.5 357.5 312.5 392.5 375 365 375 312.5 365 327.5 363 372.5 367.5 312.5 367.5 312.5 336 372.5 327.5 312.5 392.5 375 312.5 365 375 312.5 365 375 312.5 365 375 312.5 365 375 312.5 365 375 312.5 365 375 312.5 365 375 312.5 365 375 312.5 365 375 312.5 365 375 312.5 365 375 312.5 365 375 312.5 365 375 312.5 365 375 375 312.5 365 375 375 375 375 365 375 375 375 365 375 375 365 375 375 375 365 375 375 365 375 375 365 375 375 365 375 375 365 375 375 365 375 375 365 375 375 375 365 375 375 375 365 375 375 375 375 365 375 375 375 375 375 375 375 37	Net 71 333.56 372.45 357.62 311.93 393.02 377.99 364.73 354.39 327.79 352.48 331.65 323.21 356.01 377.51 377.02 Worst Net 76 331.49 373.54 357.23 311.76 393.60 380.06 367.02 351.38 327.01 354.78 330.64 320.45 353.18 380.00 375.22	% Error -0.726 -0.014 0.034 -0.182 0.133 0.797 -0.074 -5.496 4.894 -3.431 1.266 -4.939 -1.925 1.344 2.590 -5.496 % Error -1.343 0.280 -0.074 -0.236 0.281 1.349 0.553 -6.299 4.643 -2.801 0.958 -5.749 -2.706 2.012 2.101	Net 72 333.20 372.21 357.57 311.95 392.93 377.50 364.36 353.49 328.09 352.68 30.98 322.87 355.18 376.92 376.06 Worst Net 77 330.99 374.28 357.15 311.62 394.09 381.90 368.72 352.60 326.88 356.59 331.30 320.21 354.80 382.28 377.71 354.80 382.28 377.71	% Error -0.833 -0.078 0.020 -0.177 0.110 0.667 -0.174 -5.737 4.990 -3.374 1.062 -5.038 -2.155 1.186 2.330 -5.737 % Error -1.492 0.479 -0.097 -0.283 0.404 1.840 1.019 -5.973 4.603 -2.305 1.160 -5.820 -2.260 2.624 2.778	Net 73 333.91 372.79 357.67 311.94 393.10 378.33 365.49 354.60 328.30 353.35 331.75 323.58 356.63 377.93 377.46 Worst Net 78 331.40 375.98 357.19 311.23 394.64 385.47 371.38 355.21 326.82 357.40 333.63 320.42 358.20 385.81 381.54	% Error -0.622 0.077 0.048 -0.180 0.152 0.889 0.135 -5.439 5.058 -3.191 1.298 -4.830 -1.753 1.458 2.709 -5.439 * 6.087 -0.087 -0.406 0.545 2.793 1.749 -5.2777 4.582 -2.081 1.871 -5.758 -1.324 3.574	Net 74 336.15 372.98 357.14 312.37 392.81 376.29 366.14 352.96 329.96 352.28 330.98 324.54 354.32 375.93 373.28 Worst Net 79 310.92 359.50 353.16 312.63 387.63 387.63 387.63 363.37 345.96 330.02 316.50 358.69 317.28 307.74 329.11 366.10 357.39	% Error 0.046 0.128 -0.102 -0.042 0.080 0.344 0.312 -5.878 5.587 -3.486 1.063 -4.548 -2.392 0.921 1.572 -5.878 % Error -7.464 -3.491 -1.213 0.043 -1.241 -3.102 -5.217 -11.994 1.281 -1.729 -3.119 -9.489 -9.337 -1.719 -2.750	Net 75 332.77 372.93 357.36 312.06 393.12 378.29 366.05 350.73 328.00 353.24 330.30 321.31 352.17 377.82 372.88 Worst Net 80 335.16 372.45 357.55 312.31 392.57 375.99 364.86 360.09 327.37 354.10 334.53 327.35 362.12 377.09 382.44 Worst	% Error -0.961 0.116 -0.038 -0.139 0.158 0.876 0.287 -6.473 4.961 -3.222 0.856 -5.496 -2.984 1.427 1.463 -6.473 .013 -0.013 0.013 -0.062 0.018 0.264 -0.038 -3.975 4.760 -2.985 2.145 -3.719 -0.241 1.232 4.067

	Actual	Net 81	% Error	Net 82	% Error	Net 83	% Error	Net 84	% Error
	336	334.37	-0.484	333.58	-0.720	332.61	-1.008	331.67	-1.288
ata	372.5	372.45	-0.014	372.45	-0.013	372.41	-0.023	372.41	-0.024
0	357.5	357.59	0.025	357.60	0.028	357.63	0.036	357.60	0.029
ing	312.5	312.14	-0.116	311.99	-0.163	311.89	-0.196	311.81	-0.221
in	392.5	392.65	0.039	392.75	0.063	392.82	0.082	392.92	0.107
Tra	375	377.04	0.543	378.11	0.829	378.98	1.060	379.90	1.307
	365	364.84	-0.044	364.91	-0.024	364.92	-0.023	365.10	0.027
	375	359.77	-4.061	359.45	-4.147	358.98	-4.273	358.54	-4.391
	312.5	326.72	4.550	326.05	4.335	325.36	4.116	324.67	3.893
ita	365	354.09	-2.990	354.16	-2.970	354.36	-2.916	354.70	-2.822
Da	327.5	334.50	2.137	334.49	2.136	334.37	2.099	334.30	2.076
st	340	326.43	-3.992	325.50	-4.264	324.49	-4.561	323.51	-4.849
Ĕ	363	361.98	-0.281	361.87	-0.313	361.56	-0.398	361.31	-0.465
	372.5	377.91	1.451	378.79	1.687	379.54	1.889	380.39	2.119
	367.5	382.76	4.152	383.11	4.248	383.34	4.311	383.64	4.393
		Worst	4.550	Worst	4.335	Worst	-4.561	Worst	-4.849