Ma	th	10	8-01	
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Dr.	Li	lv	Yen	

## Quiz Two Show all your work

Name:		
Number:		
Signature:		
Score:	/10	

**Problem 1**: Use a permissible graphing calculator (TI83, TI83+, TI84-Plus) to evaluate the following. Round your answers to 6 decimal places.

a. 
$$\frac{213.9 - 2.3^4}{\sqrt{5.39} - 20.8} \approx$$

$$-10.061276$$

b. 
$$\left(\frac{10}{3}\right)^{1.41} - 12.4 \times \left(\frac{9}{11}\right)^{-1.23} \approx$$

$$-10.410608$$

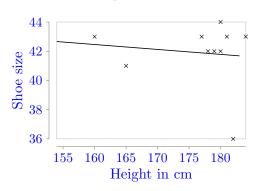
Score: /2

**Problem 2**: Shown is a sample of 10 males from a data set from kaggle.com showing height, weight, shoes size and gender of people.

Height (cm):	180	165	178	182	160	181	184	180	179	177
Shoe size (European):	42	41	42	36	43	43	43	44	42	43

Use the given data to answer the following questions:

a. Draw a scatter plot. Provide dimensions of the window and label your axes.



Score: /2

b. Use linear regression to find a model to fit your plot. Report your model to six decimal places.

$$y = -0.337987 \times 10^{-1}x + 47.868846$$

Score: /2

c. According to your model, what is the shoe size accurate rounded to a whole number of a student with a height of 185 cm? Comment on the reliability of your answer.

If x = 185, then  $y \approx 41.6161$  cm. Extrapolation is always dubious.

Score: /1

d. According to your model, what is the predicted height for a student with a shoe size of 46? Comment on the reliability of your answer.

Solving  $46 = -0.337987 \times 10^{-1}x + 47.8688$  yields  $x \approx 55.2935$  cm. This is clearly ridiculous.

Score: /2

e. Comment on the reliability of your linear regression model relative to the scatter plot.

This data is not suitable for any model. It looks like three outliers and a cluster of data. Common sense dictates at least a positive slope.

Score: /1