Working Hard or Hardly Working?
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Name _____

Class _____

Problem 1 – Histograms and Box Plots

On page 1.3, you will see data of the average commute time for people who live in major US cities.

- Examine the histogram. How is the data distributed?

- According to the histogram on page 1.3, how many cities have an average commute time between 25 and 29 minutes?

On page 1.5, you will see the data now displayed in a box plot.

- What is the median commute time?

- What is the mean commute time?

- Are the median and mean good representations of the data? Why or why not?

- Which city has the longest commute time? How do you know?

- Which graph should be used if we wanted to know how often a certain time occurs in the data, the box plot or the histogram? Explain your reasoning.

Problem 2 – Bivariate Data

A survey was conducted at a school similar to yours. It asked 36 teachers their age and the number of years experience they had teaching. The survey results appear on page 2.2.

- What trends do you see in the scatter plot of the data?

On page 2.4, insert a movable line on the graph (**MENU > Analyze > Add Movable Line**). Drag it around on the screen until it appears to 'fit' the data.

- What is the equation of your line?

On page 2.5, insert a linear regression on the graph (**MENU > Analyze > Regression > Show Linear (mx + b)**).

- What is the equation of the regression line?

- How does the regression line compare to the line you 'fit' to the data on page 2.4?

- In this situation, what is the significance of the value for *m* in the regression equation?

- What is the mean age? Use this age and the regression line to determine the number of years experience the "average"-aged teacher has.

- According to the regression equation, what is the age that a teacher begins his/her teaching career?

- Teachers are considered retirement aged after about 30 years teaching experience. At what age is a teacher who is about to retire?