Classwork – Scatter Plots & Box-and-Whisker Plots Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



1. Test drivers for the Acme Motor Company drove the new model Acme for 100 miles while maintaining certain average speeds. For each run, they noted the average speed and the average number of miles per gallon (MPG) they achieved.

**Part A:** Create a scatterplot of MPG vs. speed. What type of model does the graph

 show?

**Part B:** Write the regression equation to best fit the data.

**Part C:** Identify the correlation coefficient and explain what it represents for the data.

 $r=$ \_\_\_\_\_\_\_\_\_\_\_\_



1. Mrs. Moises, the school counselor, keeps a candy jar in her office for students. During one week, she kept count of how many students came to visit her and the number of candies in the jar, as shown in the scatter plot.

Based on the trend line, what is the best prediction for the number of

candies in the jar when 30 students visit her?

[a] 90

[b] 180

[c] 135

[d] 150

1. Looking at the graph showing a line of best fit, what is the correlation between the $x$ and $y$ variable?



[a] $y$ is constant

[b] $y$ increases as $x$ increases

[c] $y$ increases as $x$ decreases

[d] $y$ decreases as $x$ increases

1. Ten circular cardboard disks were weighed and the mass and radius were recorded. The information is shown.



**Part A:** Create a scatterplot of cm vs. gm. What type of model does the graph show?

**Part B:** Determine the regression equation to best fit the data.

1. State if there appears to be a positive, negative or no correlation. When there is a correlation, identify the relationship as linear, exponential, or quadratic.



a. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ b. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ c. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. This box-and-whisker plot shows the ages of clerks in a supermarket.
2. Find the median age of the clerks. \_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. What percentage of the clerks are between the ages of 25-36? \_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. Find the range of the data. \_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. Find the lower quartile of the data. \_\_\_\_\_\_\_\_\_\_\_\_\_\_
6. Ms. Alison drew a box-and-whisker plot to represent her students’ scores on a mid-term test.

Steve earned an 85 on the test. Describe how his score compares with those of his classmates.

[a] About 75% scored higher; about 25% scored lower

[b] About 75% scored higher; about 50% scored lower

[c] About 25% scored higher; about 75% scored lower

[d] About 50% scored higher; about 50% scored lower

1. For questions a – e, refer to the box & whisker graph below which shows the test results of a math class.

**Test Scores (as %) for 6th Period**

 38 72 88 96 102

\_\_\_\_\_\_\_\_ a. What was the high score on the test?

\_\_\_\_\_\_\_\_ b. What percent of the class scored above a 72?

\_\_\_\_\_\_\_\_ c. What was the median score on the test?

\_\_\_\_\_\_\_\_ d. What percent of the class scored between 88 & 96?

e. Do you think that this test was too hard for the students? Explain.

1. For questions a – g, refer to the box & whisker graphs below that compare homework time per night with TV time per night for the same group of sophomores.

**TV & Homework Minutes per Night**

 Homework Time

 0 20 48 60 190

 TV Time

0 15 60 110 225

\_\_\_\_\_\_\_\_ a. What percent of the sophomores watch TV for at least 15 minutes per night?

\_\_\_\_\_\_\_\_ b. What is the 3rd quartile for the TV time data?

\_\_\_\_\_\_\_\_ c. What is the maximum for the homework time data?

For questions d – g, identify if each statement is **true or false**.

\_\_\_\_\_\_\_\_ d. 25% of the sophomores spend between 48 & 60 minutes per night on homework.

\_\_\_\_\_\_\_\_ e. 15% of the sophomores didn’t watch TV that month.

\_\_\_\_\_\_\_\_ f. In general, these sophomores spend more time watching TV than doing homework.

\_\_\_\_\_\_\_\_ g. 225 sophomores watch TV.