ALGEBRA I

Name _____ Pd_____ Date_____

Unit-6 STUDY GUIDE **Describing Data**

Show work on Notebook/ Graph Paper. Highlight or Circle the answers. Label each problem.

1. Find the mean absolute deviation of the following data set. Show **ALL work!**

50	**45**	**35**	**37**	**40**	**29**	**30**

2. A survey was given to students, asking them to rate their experience at Pebblebrook High school on a scale of 1-20, with 20 being the best. Here is the data that was collected from 10 students.

15	10	18	11	3	15	12	20	5	8

Create a box and whisker pot. Find the **IQR** and **range** of the data?

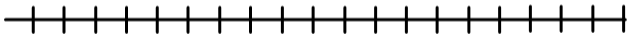
Min:

1st Q:

Median:

3rd Q:

Max:



3. A group of students were polled to find out how many were planning to major in a scientific field of study in college. The results of the poll are shown in the frequency table below.

	Science	**Non-Science**
Junior	100	230
Senior	120	250

a) Create a table of the joint and marginal relative frequencies.

b) Out of the **juniors**, what **percent** are planning to study a scientific field? (round to nearest percent)

c) Out of the **seniors**, what percent are **NOT** pursuing a scientific field? (round to nearest percent)

4. Tyler and Alyssa each get paid a bonus at the end of each month. This table shows their bonuses.

(a). Who had the greatest Median? Show your calculations.

(b) Who had the greatest interquartile range?

(c) Who had the greatest range?

Month	Tyler	Alyssa
January	$250	$250
February	$290	$340
March	$270	$310
April	$240	$300
May	$260	$260
June	$270	$280
July	$280	$270

5. Use the table below to answer the questions about the U.S. residential carbon dioxide emissions from 1993 to 2002. Emissions are measured in million metric tons.

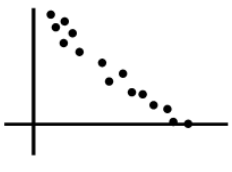
Year, t	**1993** ***x=0***	**1994** ***x=1***	**1995** ***x=2***	**1996** ***x=3***	**1997** ***x=4***	**1998** ***x=5***	**1999** ***x=6***	**2000** ***x=7***	**2001** ***x=8***	**2002** ***x=9***
Emissions	1027.6	1020.9	1026.5	1086.1	1077.5	1083.3	1107.1	1170.4	1163.3	1193.9

a) Find the best-fitting line for the data AND the correlation coefficient.

b) Using this model, how many residential tons were emitted in 1990? In 2010?

Select the best answer choice

6. Which of the following graphs has a **strong negative** correlation?

A. 

B. 

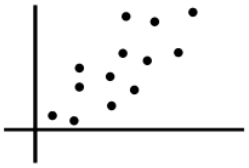
C. 

D. 

7. The events x and y have a correlation coefficient of r = -0.89. What is the relationship between x and y?

A. The events have a strong negative linear relationship.
B. The events have a strong positive linear relationship.
C. The events have a weak negative linear relationship.
D. There is very little or no correlation.

8. Given the scatter plot, what is the **best** type of function to represent the data?



A. Linear
B. Quadratic
C. Exponential
D. No Correlation

9. Between which of the following variables would you expect there to be a **Positive** correlation?

A. The outside temperature and the number of layers of clothing a person wears
B. The number of students at Pebblebrook and the number of cats at the animal shelter
C. The number of cigarettes a person smokes and the person's life expectancy
D. The number of years spent in school and salary

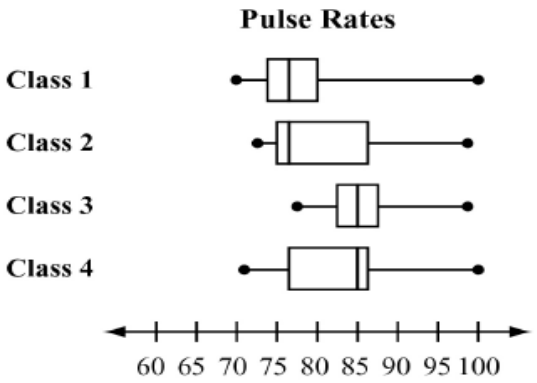
10. Which of the following is one of the 5 values needed to make a box-and-whisker plot?

A. Range
B. 1st Quartile
C. Mode
D. Interquartile Range

11. George asked five of his friends how long they practiced shooting free throws and their shooting percentage in the last 5 games. He found a linear regression equation for the data to be **y = 10.5x + 50.6**. What does the **10.5** mean in the context of this equation?

A. That his friends shot an average of 10.5 free throws a game.
B. That for every hour they practiced, their free throw percentage went up 10.5.
C. That they need to practice 10.5 hours a day to increase their free throw percentage.
D. None of the above.

Mr. Murray recorded the pulse rates for each of the students in his classes after the students had climbed a set of stairs. He displayed the results, by class, using the box plots shown.



12. Which class had the **smallest Interquartile range**?

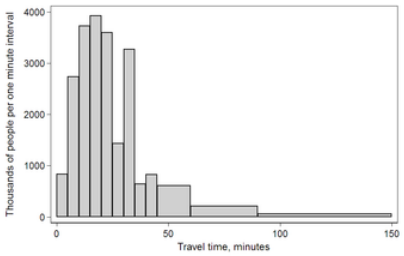
A. Class 1
B. Class 3
C. Class 2
D. Class 4

13. What type of correlation does the following have? *The height of a person vs. The money in his/her savings account*

A. Positive Correlation
B. Negative Correlation
C. No Correlation

14. Which is the best description of the distribution?

A. Bimodal
B. Symmetric
C. Skewed Left
D. Skewed Right



Topics for Review

- Dot Plots, Histograms, Box Plots
- Center: Median, Mean ; Spread: Interquartile Range (IQR), Mean Absolute Deviation (M.A.D)
- Shape of Data
- Two-Way Frequency Tables: Joint, Marginal and Conditional Relative Frequency
- Scatter Plots and Trends
- Line of Best Fit; Interpret the slope and intercept
- Compute the correlation coefficient
- Correlation vs. Causation