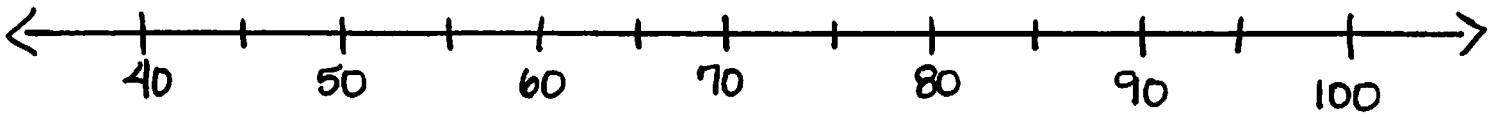
Coordinate Algebra
Review Worksheet for Unit 4 Test

Name_____ Class Period_____

1. Identify the Five-Number Summary number for the data of Johnny's test scores and draw the Box & Whisker plot.

48, 58, 65, 71, 77, 80, 83, 88, 92, 92, 93, 96, 97



What is the **range**? _____ **IQR**? _____ **MAD**? _____

Are there any outliers in the data set? Show your work to support your answer.

2. The table gives the low temperatures in Chicago on eight randomly selected winter days. Which measure of central tendency probably gives the LEAST ACCURATE prediction of a "typical" low temperature on a Chicago winter day?

Chicago Lows							
17	25	28	12	16	55	18	22

3. Construct a frequency table from the following information:

A survey of 200 9th and 10th graders was given to determine what their favorite subject was. 72 said Math (50 which were freshmen), 38 said Social Studies (20 which were sophomores), and 40 freshmen and 50 sophomores said PE was their favorite.

	Math	Social Studies	PE	Total
9th Graders				
10th Graders				
Total				

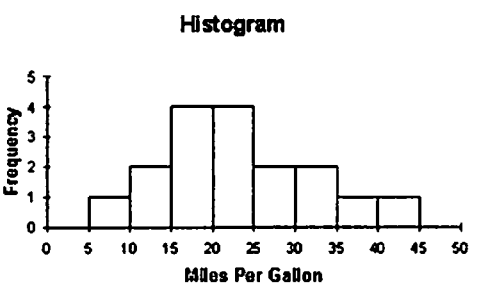
Based on your table above, answer the following questions:

a) What are the **marginal frequencies** for **each subject**?

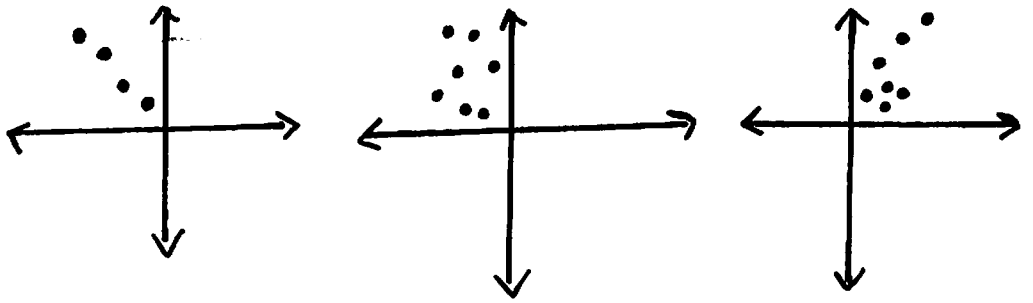
b) What is the **joint frequency** the student is a 10th grader that likes PE?

c) If a student likes Math, what is the **conditional frequency** that they are a freshman?

4. Describe the **shape** of the distribution. In **what interval** would the **median** be included?



5. **Estimate** the correlation coefficient for the following graphs.



6. Determine if the following situations represent a **positive, negative, or no correlation**.
   a) Number of hours studying for the SAT and your score. _____
   b) The distance you drive and the number of stars in the sky. _____
   c) The temperature and the length of daylight hours for the day _____

7. Tell whether the following situations are causation (answer **yes or no**).
   a) The number of boats on Lake Allatoona and the number of cars on the street ____
   b) The hours you work and the money you make ____
   c) The time spent studying and the A on the test _____

8. The following table shows the population growth of the state of Georgia in millions over two decades.

Years (x)	1990	1994	1999	2003	2007	2009	2010
Population(y)	6.5	7.2	7.9	8.4	9	9.4	9.6

   a) Find the **exponential function of best fit** using the information from above.

   b) What is the **growth factor** and the **growth rate**?

   c) State the growth rate in **context**.

   d) Approximately what year did 7.6 million people live in Georgia?

   e) How many people will live in Georgia in **2020**?

9. The following table shows a student's study hours versus their test scores.

Hours studied (x)	2	5	1	0	4	2	3
Grade on test (y)	77	92	70	63	90	75	84

a) Use your calculator to find the **line of best fit** for the data above.

b) What is the **value of r**?

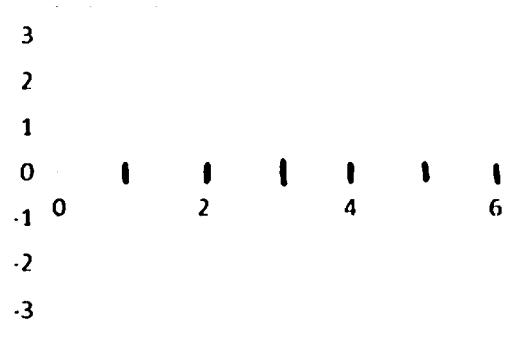
c) What is the **slope** of the equation.

d) Interpret the slope in **context** of the equation.

e) Use the equation to predict the test grade for a student who studies **5.5 hours**.

f) Calculate and plot the residuals using the table below.

Hours Studying	Actual	Predicted	Residuals
0	63		
1	70		
2	77		
2	75		
3	84		
4	90		
5	92		



g) Is there a pattern?

h) Is a linear model a good model?

Cumulative Review:

Write a story that relates to the equation.

10. $y = 25(2)^x$

11. $y = -x + 10$

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12. A car travels 460 miles in 8 hours. Use dimensional analysis to covert the car's speed to feet per second.

Solve the following equations.

13. $\frac{5}{9}x = \frac{15}{81}$

14. $\frac{2}{5}(20x + 15) = 6x - 8$

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15. The total cost for Greg's graduations party was $208.75. Including family and friends, Greg had 42 people attend his party. Write and solve an equation to find the cost Greg's parents spend on each person who attended.