

Name: _____ Date: _____

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

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

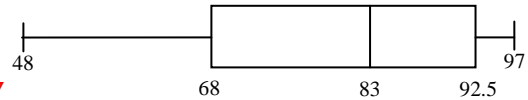
Mean = 80

Min = 48, Q1 = 68, Median = 83, Q3 = 92.5, Max = 97

What is the range? 49 IQR? 24.5

Are there any outliers in the data set?

No $68 - 1.5(24.5) = 31.25$ $92.5 + 1.5(24.5) = 129.25$



MAD? 12.46

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

Mean = 24.125, Median = 20 The Mean is greatly affected by 55, which is an outlier.

3. Describe the shape of the distribution. Estimate the mean, median and upper and lower quartiles for the data.

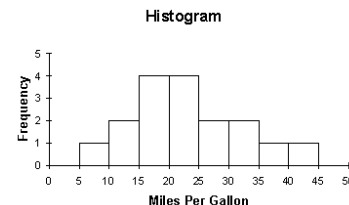
Skewed right

Mean \approx 23.09

Median = 20-25 for Person 9

Q1 = 15-20 between Person 4 and 5

Q3 = 30-35 between Person 13 and 14



4. 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.

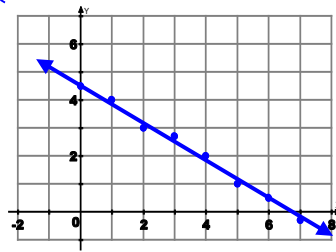
	Math	SS	PE	Total
9th	50	18	40	108
10th	22	20	50	92
Total	72	38	90	200

Based on your table above, answer the following questions:

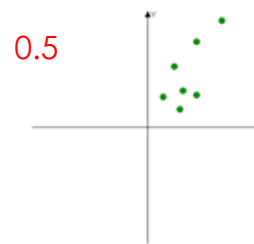
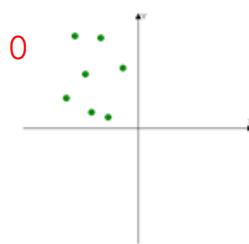
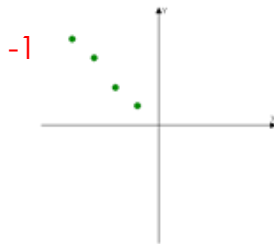
- What are the marginal relative frequencies? 0.36, 0.19, 0.45, 0.54, 0.46
- What are the joint relative frequencies? 0.25, 0.09, 0.20(top), 0.11, 0.10, 0.25(bottom)
- What is the probability that a student surveyed is a freshman? 54%
- What is the probability that a student surveyed likes Math? 36%
- If a student likes Math, what is the probability that they are a freshman? 69.4%

5. For the given scatter plot, find the equation for the line of best fit by hand.

$y = (-2/3)x + 5$



6. Estimate the correlation coefficient for the following graphs.



7. Determine if the following situations represent a positive, negative, or no correlation.

- a) Number of hours studying for the SAT and your score. positive
- b) The distance you drive and the number of stars in the sky. none
- c) The temperature and the length of daylight hours for the day positive

8. Tell whether the following situations are causation: (yes or no)

- a) The number of boats on Lake Allatoona and the number of cars on the street No
- b) The hours you work and the money you make Yes
- c) The time spent studying and the A on the test Yes

9. The following table shows a person 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. $y=6.0887x+63.9274$
- b) What is the value of r? 0.988 Is this a good fit? Yes
- c) Use the equation to predict the test grade for someone who studies 5.5 hours. 94.37
- d) Calculate and plot the residuals using the table below. Is there a pattern? Is this a good model? Yes, there is a pattern. Getting wider. Not a good model.

Hrs Studying	Actual	Predicted	Residuals
0	63	63.927	-0.927
1	70	70.016	-0.016
2	77	76.105	0.895
2	75	76.105	-1.105
3	84	82.194	1.806
4	90	88.282	1.718
5	92	94.371	-2.371

