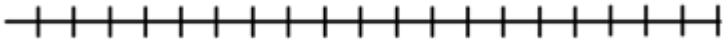
GSE Algebra I | Unit 6 – Describing Data | 6.7 - Study Guide

Name: _____ Date: _____

Use the following to review for you test. Work the Practice Problems on a separate sheet of paper.

What you need to know & be able to do	Things to remember	Problem	Problem
Central Tendency	• Mean • Median • Mode	**1.** 36, 39, 58, 42, 106, 39, 48, 45	**2.** 50, 55, 60, 58, 62, 57, 68, 51, 63
Measures of Spread	• Q1 • Q3 • IQR • Minimum • Maximum • Range • MAD	**3.** (Use the same #s from 1)	**4.** (Use the same #s from 2)
Box-and-Whisker Plot and Outliers	• First dot: Min • First Line: Q1 • Middle Line: Median • Third Line: Q3 • Last dot: Max • Outlier: Q1 – 1.5(IQR) Q3 + 1.5(IQR)	**5.** Using the data from #1 & 3, construct a box and whisker plot.  **6.** Are there any outliers? Show your work!	
Correlation vs. Causation	• Positive: Both items are increasing/decreasing • Negative: one item increases as the other decreases • No Correlation: No relationship • Causation: One item causes the other.	**7.** Practicing Free Throws vs. Free Throw Percentage	**8.** Colors of the Sky vs. Time of Day
		9. Weight vs. Amount of Exercise	**10.** Number of Followers on Twitter vs. Number of Friends on Facebook

Linear Regression

- y = ax + b
- r = correlation coefficient (if close to 0 bad fit; if close to 1 or -1 good fit.)

11. Determine the line of best fit. Is this model a good fit for the data?

Price	4.00	5.50	3.50	8.00	5.50	7.00
# of Sandwiches	68	55	85	22	64	28

Quadratic Regression

Data Data 4 (clear)

Type in new data

2nd Data Quadratic Reg

Change to YES

Write your equation in Standard Form

To PREDICT values use f(on the TABLE button

The amount of medication in a patient's bloodstream varies over time. The table below shows the concentration of a certain medication in milligrams per liter at various time intervals after being administered.

Time (minutes)	0	30	60	90	120	150
Concentration (mg/L)	0	39.02	49.93	42.34	25.06	7.78

15. What is the quadratic regression model? Write in Standard Form and round to 4 decimal places.

16. Predict the concentration of the medicine at 12 hours (720 minutes).

Exponential Regression

- $y = a(b)^x$
- r = correlation coefficient (if close to 0 bad fit; if close to 1 or -1 then good fit.)

12. Determine the exponential regression model. Is this model a good fit for the data?

Year	0	2	4	7
Revenue	3	4	11	25

Probability

- Joint Probability: Individual Cell/Table Total
- Marginal Probability: Row or Column Total/ Table Total
- Conditional Probability: Individual Cell/Row or Column Total

Complete the table to answer the following questions.

	Football	Basketball	Soccer	
Males	48	35	17	
Females	22	38	40	

13. What is the probability that a randomly chosen person is a female and likes soccer?

14. What is the probability that someone likes basketball?

15. Given that a person likes football, what is the probability they are male?