


## Final Exam Review – Unit 4

Name \_\_\_\_\_ Class Period \_\_\_\_\_

What you need to know & be able to do	Things to remember	Problem	Problem
Identify the measures of central tendency.	<ul style="list-style-type: none"> <li>• Mean</li> <li>• Median</li> <li>• Mode</li> </ul>	1. 36, 39, 58, 42, 106, 39, 48, 45	2. 50, 55, 60, 58, 62, 57, 68, 51, 63
Identify the measures of spread.	<ul style="list-style-type: none"> <li>• Q1</li> <li>• Q3</li> <li>• IQR</li> <li>• Minimum</li> <li>• Maximum</li> <li>• Range</li> <li>• MAD</li> </ul>	3. (Use the same #s from 1)	4. (Use the same #s from 2)
Construct a box-and-whisker plot.	<ul style="list-style-type: none"> <li>• First dot: Min</li> <li>• First Line: Q1</li> <li>• Middle Line: Median</li> <li>• Third Line: Q3</li> <li>• Last dot: Max</li>   <li>• Outlier: Q1 – 1.5(IQR) Q3 + 1.5(IQR)</li> </ul>	5. Using the data from #1 & 3, construct a box and whisker plot. <div style="text-align: center; margin: 10px 0;">  </div>	6. Are there any outliers? Show your work!
Determine if the situation has a positive, negative, or no correlation and if there is causation.	<ul style="list-style-type: none"> <li>• Positive: Both items are increasing or both items are decreasing</li> <li>• Negative: one item increases as the other decreases</li> <li>• No Correlation: No relationship</li> <li>• Causation: One item causes the other.</li> </ul>	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

Find the line of best fit.

- $y = ax + b$
- $r =$  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?

<b>Price</b>	4.00	5.50	3.50	8.00	5.50	7.00
<b># of Sandwiches</b>	68	55	85	22	64	28

Construct a residual plot and determine if the model is a good fit or not.

- Find the predicted values.
- Actual minus predicted
- Plot the residuals
- If it makes a pattern it is NOT a good fit.
- No pattern is a good fit.

**12.** Using the line of best fit from #11, construct a residual plot.

Price	Actual	Predicted	Residuals
4.00	63		
5.50	70		
3.50	77		
8.00	75		
5.50	84		
7.00	90		

Find the exponential regression model.

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

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

<b>Year</b>	0	2	4	7
<b>Revenue</b>	3	4	11	25

Construct a probability table.

- 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	

**14.** What is the probability that a randomly chosen female likes soccer?

**15.** What is the probability that someone likes basketball?

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