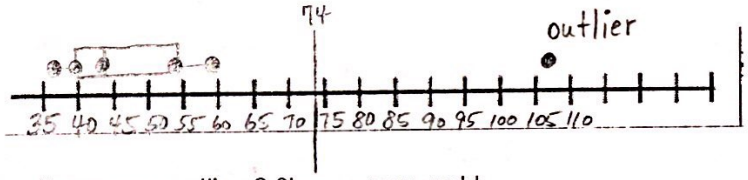
GSE Algebra I | Unit 6 – Describing Data | Study Guide

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 47.125 • Median 43.5 • Mode 39	**1.** 36, 39, 58, 42, 106, 39, 48, 45 36 39 39 42 | 45 48 58 106 $\frac{377}{8}$	**2.** 50, 55, 60, 58, 62, 57, 68, 51, 63
Measures of Spread	• Q1 39 • Q3 53 • IQR 14 • Minimum 36 • Maximum 106 • Range 70 • MAD 13.156	**3.** (Use the same #s from 1) -11.125 -8.125 -8.125 -5.125 -2.125 0.875 10.875 58.875 $\frac{105.25}{8}$	**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! $Q_3 + 1.5(IQR)$ $53 + 1.5(14)$	
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 positive	**8.** Colors of the Sky vs. Time of Day
		9. Weight vs. Amount of Exercise negative	**10.** Number of Followers on Twitter vs. Number of Friends on Facebook no correlation

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

$y = -13.7x + 130.3$ $r = -0.97$

Two Way Tables

- Joint frequencies
- Marginal frequencies
- Conditional frequencies

Complete the table to answer the following questions.

	Football	Basketball	Soccer	Total
Males	48	35	17	100
Females	22	38	40	100
Total	70	73	57	200

12. What percent of females like soccer? Is this conditional, marginal, or joint frequency?

$\frac{40}{100} = .4 = 40\%$ conditional

13. What percent of respondents like basketball? Is this conditional, marginal or joint frequency?

$\frac{73}{200} = .365 = 36.5\%$ marginal

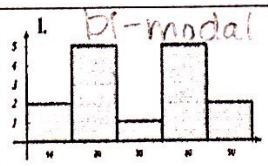
14. Given that a person likes football, what is the probability they are male? Is this conditional, marginal or joint frequency?

$\frac{48}{70} = .686 = 68.6\%$ conditional

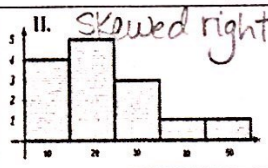
Histograms

- Skewed Left/Right
- Normal
- Uniform
- Bi-Modal

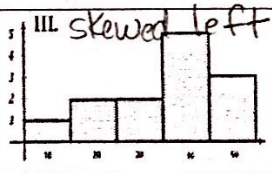
I. Bi-modal



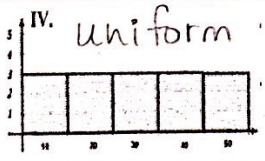
II. Skewed right



III. Skewed left



IV. uniform



V. normal