MAT 117 Review for Exam 1

Important Note: You will be allowed to use your calculator on this test (no sharing or using cell phones). For some parts of the test you will probably **need** to use a calculator to get your answers.

Lesson 1 (Sections 1.1, 1.2, and 2.1)

Terms to understand:
1. variable
2. data
3. categorical data
4. quantitative data
5. sample

6. population
7. statistic
8. parameter

Know how to:
1. make a frequency table for a categorical variable.
2. Compute the mean of a quantitative variable.

Lesson 2 (Sections 2.2 – 2.6)

Terms to understand:
When describing data:
1. distribution
2. center
3. spread
When describing graphs:
1. symmetric
2. skewed left
3. skewed right

4. range
5. outlier
6. p-th percentile

4. tail
5. unimodal
6. bimodal

Types of Graphs (be able to make and interpret)
For categorical data
1. pie chart
2. bar graph
For quantitative data
1. dot plot
2. stem-and-leaf plot

3. Pareto chart

3. histogram
4. box plot

Know how to compute and interpret:
1. mean
2. standard deviation (calculator only)
3. median

4. interquartile range (IQR)
5. 5-number summary
6. z-score

Understand and be able to use:
1. empirical rule for bell-shaped distributions
2. describe a range of values that are within ___ (specified) standard deviations of the mean
3. rules for determining outliers (using mean and standard deviation, or using quartiles & IQR)

Be able to:
1. compute z-score given an observation
2. compute observation given a z-score
3. recognize potential outliers based on z-scores

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Lesson 3 (3.1 – 3.3)

Terms to understand:

1. explanatory variable
2. response variable
3. association
4. correlation
5. independent
6. causation
7. conditional proportion
8. linear association
9. deviation
10. residual
11. extrapolation
12. outlier

Be familiar with graphical ways to view association for different pairs of variables:

Categorical and Quantitative
1. graphical analysis (e.g., side-by-side box plots)
2. numerical analysis (comparison of center and spread)

Categorical and Categorical
1. graphical analysis (side-by-side bar graphs)
2. numerical analysis (comparison of conditional proportions)

Quantitative and Quantitative
1. graphical analysis (scatterplot)
2. numerical analysis (regression line)

Be familiar with following concepts regarding scatterplots:

1. trend
2. direction of association
3. strength of association
4. correlation coefficient
5. regression line

Lesson 4 (Chapter 4)

Terms to know:

1. biases
2. sampling methods
3. abuses of statistics

In general, you can expect the types of problems that appear on quizzes, worksheets, and homework.