The following is a list of concepts by chapter that you should review before the exam. Not all topics on this study guide will be tested on the exam, however all concepts that will be on the test are shown below in no particular order.

Chapter One

- 5 Ws of data

- Quantitative Variables

- Categorical Variables

Chapter Two

- Pie Charts, Bar Charts, Mosaic Plots, and Contingency Tables

- Know when to use each type of visualization

- Marginal Distributions

- Conditional Distributions

- Evidence of Association

Chapter Three

- Describing Histograms

- Create Stem-and-Leaf Plots

- Mean, Median, Standard Deviation, Range, IQR

- Know when to use Mean and Standard Deviation or Median, Range, and IQR

- Know how to find the Mean and Median

- Calculate IQR

- Know the relationship between Mean, Median, and skewness

- Outliers and Robustness

Chapter Four

- Interpret Box plots

- Know how to create Box plots

Chapter Six

- Explanatory versus Response Variable

- Describe scatterplots

- Interpretation of Correlation

- Lurking Variables

- Causation versus Correlation

Chapter Seven and Eight

- Know how to calculate linear regression

- Know how to interpret linear regression

- Know relevant mathematical symbols

- Know how to calculate Residuals

- Know how to use linear regression to create predictions

- Extrapolation

- Interpretation and description of residual plots

- Interpretation and calculation of R^2