

AFM Unit 3 Study Guide: Statistics

Learning Target: I can apply and compare methods of data collection.

You should be able to identify examples of a census, sample survey, experiment, or observational study.

Learning Target: I can apply statistical principals and methods in sample surveys.

You should be able to identify examples of simple random samples, convenience samples, cluster samples, stratified samples, and systematic samples.

Learning Target: I can determine measures of central tendency and spread.

You should be able to find the mean, median, mode, standard deviation, variance and range of a given data set. You should be able to write a five number summary and give the proper name for each of the five numbers (min, lower quartile, median, upper quartile, and max). You should be able to use **the formula** for an outlier to identify outliers and use the five number summary along with the list of outliers in order to graph a modified boxplot (in which the outliers are not part of the whiskers. You should be able to tell whether a distribution is skewed left, skewed right, or roughly symmetric based on a given mean and given median (see your notebook for examples). You should be able to tell which center (the mean or median) is better for skewed data and which is better for non-skewed data.

Learning Target: I can recognize, define, and use the normal distribution curve.

You should be able to describe the shape of a normal distribution and name its defining characteristics (what do you know about any normal distribution?). You should be able to draw a normal distribution given a mean and standard deviation. You should be familiar with the Empirical Rule and what that looks like on your graph of the normal distribution. You should be able to reason through a question using z-scores (for example, you should be able to use the z-table in order to calculate the percentage that lies between any two values). You should be able to answer questions such as “what percentage?” or “how many?” based upon your knowledge of normal distributions.

Learning Target: I can interpret graphical displays of univariate data.

You should be able to make both observations and inferences from a given graph using specific vocabulary in order to describe both.

Learning Target: I can compare distributions of univariate data.

You should be able to choose an appropriate type of data display for a given scenario and explain at least one way that you could choose to intentionally make a display misleading.