CHAPTER 3
Numerical Summaries of Center and Variation

Section 3.1 Summaries for Symmetric Distributions

Write the vocabulary terms in this section on 3 x 5 cards and study them. Important terms include **mean, average, deviation, standard deviation, variance**

Be sure to also read and study the key points, highlighted in the blue boxes in the text.

Be able to

- Describe a specific distribution (in context) for which the mean is NOT a good measure of the center
- Explain how to find the mean of a distribution
- Explain what the word **deviation** means
- Calculate the **standard deviation** for a small data set

Section 3.2 What's Unusual? The Empirical Rule and Z-scores

Write the vocabulary terms in this section on 3 x 5 cards and study them. Important terms include **Empirical Rule, standard units, z-score.**

Be sure to also read and study the key points, highlighted in the blue boxes in the text.

Be able to:

- State the Empirical Rule
- Given the mean and standard deviation of a distribution, determine the scores that are within 1, 2, or 3 standard deviations of the mean
- Explain, in your own words, the reason for using z-scores
- Interpret a given z-score in context
- Find the standard score (z-score) of a given score in a given distribution

Section 3.3 Summaries for Skewed Distributions

Write the vocabulary terms in this section on 3 x 5 cards and study them. Important terms include **median, Interquartile range (IQR), quartile, Q1, Q2, Q3, range.**

Be sure to also read and study the key points, highlighted in the blue boxes in the text.

Be able to:

- Choose correct measures of center and variation for a given distribution
- Find the median of a given distribution with an odd number of scores
- Find the median of a distribution with an even number of scores
- Interpret the median in context
- Interpret the quartiles in context
- Find and interpret the IQR in context
- Find the range of a given data set

Section 3.4 Comparing Measures of Center

Write the vocabulary terms in this section on 3 x 5 cards and study them. Important term: **resistant to outliers.**
Be sure to also read and study the key points, highlighted in the blue boxes in the text.
Be able to:

- Explain how to compare 2 groups that are both symmetric, both skewed, or one skewed and one symmetric
- Give an example showing why a median is resistant to outliers

Section 3.5 Using Boxplots for Displaying Summaries

Write the vocabulary terms in this section on 3 x 5 cards and study them. Important terms include**: boxplots, potential outliers, five number summary.**
Be sure to also read and study the key points, highlighted in the blue boxes in the text.
Be able to:

- Explain the meaning of each part of a boxplot
- Explain how to find potential outliers of a distribution
- Interpret a boxplot in context; use boxplots to compare two distributions
- Given a distribution, find the five number summary