STA 3180 Statistical Modelling: Robust Statistics

I. Introduction to Robust Statistics

A. Definition of Robust Statistics

B. Types of Robust Statistics

1. Trimmed Means

2. Winsorized Means

3. M-Estimators

4. Robust Regression

II. Trimmed Means

A. Definition

B. Calculation

C. Advantages and Disadvantages

III. Winsorized Means

A. Definition

B. Calculation

C. Advantages and Disadvantages

IV. M-Estimators

A. Definition

B. Calculation

C. Advantages and Disadvantages

V. Robust Regression

A. Definition

B. Calculation

C. Advantages and Disadvantages

Problem Solving Strategies:

1. Understand the concept of robust statistics and how it differs from traditional statistics.

2. Be able to identify which type of robust statistic is appropriate for a given data set.

3. Know how to calculate each type of robust statistic.

4. Understand the advantages and disadvantages of each type of robust statistic.
5. Be able to apply the appropriate robust statistic to a given data set.
6. Practice problem solving with real data sets.