STA 3180 Statistical Modelling: ANOVA

I. Introduction to ANOVA

A. Definition of ANOVA

1. What is ANOVA?

2. Types of ANOVA

3. Assumptions of ANOVA

B. Calculating ANOVA

1. Sums of Squares

2. Degrees of Freedom

3. F-Statistic

II. One-Way ANOVA

A. Overview

1. What is one-way ANOVA?

2. When to use one-way ANOVA

3. Assumptions of one-way ANOVA

B. Calculating One-Way ANOVA

1. Calculating the Sums of Squares

2. Calculating the Degrees of Freedom

3. Calculating the F-Statistic

III. Two-Way ANOVA

A. Overview

1. What is two-way ANOVA?

2. When to use two-way ANOVA

3. Assumptions of two-way ANOVA

B. Calculating Two-Way ANOVA

1. Calculating the Sums of Squares

2. Calculating the Degrees of Freedom

3. Calculating the F-Statistic

IV. Problem Solving Strategies

A. Understanding the Problem

1. Read the problem carefully

2. Identify the type of ANOVA

3. Identify the assumptions of the ANOVA

B. Calculating the ANOVA

1. Calculate the sums of squares

2. Calculate the degrees of freedom

3. Calculate the F-statistic

C. Interpreting the Results

1. Understand the meaning of the F-statistic

2. Interpret the results in the context of the problem