



## Two-Tailed &amp; One-Tailed Tests

A Two-Tailed Hypothesis Test for population Mean; Large &amp; Small Sample

One-Tailed Tests for Population Mean; Large &amp; Small Sample

An Alternative Method of Hypothesis Testing,  $p$  - Value

Type I &amp; Type II error

**EXAM # 1**

## Tests of variance &amp; Analysis of Variance

CH. 15

Testing variance of a Normal Distribution; Chi-Square (Ch. 9 section 9.4 PP 344-347)

Comparing the variance of two Normal Populations

One-way ANOVA; The Completely Randomized design

Two-Way ANOVA

## Some Nonparametric Tests

CH. 10

## Simple Regression &amp; Correlation

CH. 12

Introduction

The mechanics of straight Line

The Basic Objective of Regression Analysis

Ordinary Least Square (OLS); the line of best fit

An Example of Using OLS

Assumptions of OLS

A Measure of Goodness-of-Fit; The Standard Error of Estimate

Correlation Analysis

Limitations of Regression Analysis

Interval Estimation in Regression Analysis

Hypothesis testing about the Population correlation Coefficient

Test inferences about the Population Correlation Coefficient

Analysis of Variance Revisited

**EXAM # 2**

## Multiple Linear Regression

CH. 13

The Multiple Regression Model

Least Square Estimation

Standard Assumptions for Multiple Regression Model

The Gauss-Markov Theorem

The Explanatory Power of a Multiple Regression Equation

Confidence Intervals &amp; Hypothesis Tests for Individual Regression Parameters

Test on Sets of Regression Parameters

Prediction

**EXAM # 3**

## More on Regression

CH. 14

Model Building Methodology;

Model Specification, Coefficient Estimation, Verification, Interpretation &  
Inference

Dummy Variables

Lagged Dependent Variables

Nonlinear Models

Specification Bias

Multicollinearity

Heteroscedasticity

Autocorrelated Errors; Durbin-watson Statistic

## Inference Using Two Populations

CH. 9

Estimating the Difference between Two-Population Means

Confidence Intervals for the Difference between Two Proportions

Selecting the Proper Sample Size

Hypothesis testing Involving Two Population Large &amp; Small Samples

A Test for the Difference between Two Proportions

Review

**EXAM # 4****Homework:**

Problems from the text will be recommended. The list of problems is the minimum the students should do in each section. you will need to do these to find out your understanding of the material.