

Statistics with Corequisite Support: A Targeted Review | Table of Contents

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- 10.3.2 Calculate the Test Statistic and Degrees of Freedom - Dependent Samples
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- 10.3.3 Two Mean Hypothesis Tests (Dependent Samples) - Critical Value/Rejection Region Approach
 - Determine the critical value(s) for a hypothesis test for the mean of the differences for the paired data in order to define rejection region(s) (5)
 - Make a conclusion and interpret the results for testing the difference between means for paired data (dependent samples) using the Critical Value/Rejection Region Approach (5)
- 10.3.4 Complete the steps of a Two Mean Hypothesis Tests (Dependent Samples) - critical value approach
 - Complete the steps of a Two Mean Hypothesis Tests (Dependent Samples) - critical value approach (5, 5, 26)
- 10.3.5 Two Mean Hypothesis Tests (Dependent Samples) - P-Value Approach
 - Determine the P-value for a hypothesis test for the mean of the differences for the paired data (5)
 - Make a conclusion and interpret the results for testing the difference between means for paired data (dependent samples) using the P-Value Approach (5)
- 10.3.6 Complete the steps of a Two Mean Hypothesis Tests (Dependent Samples) - P-Value Approach
 - Complete the steps of a Two Mean Hypothesis Tests (Dependent Samples) - P-Value Approach (5, 5, 26)
- 10.3.6-Calculator: Perform and Interpret a Hypothesis Test for Dependent (paired data) with Technology
 - Perform and Interpret a Hypothesis Test for Dependent (paired data) with Technology - Calculator
- 10.3.6-Excel: Perform and Interpret a Hypothesis Test for Dependent (paired data) with Technology - Excel
 - Perform and Interpret a Hypothesis Test for Dependent (paired data) with Technology - Excel

10.4 Two population hypothesis test for proportions (Independent Samples)

- 10.4.1 Two population hypothesis test for proportions (Independent Samples)
 - Identify the null and alternative hypotheses for a hypothesis test to test the difference between two population proportions (5)
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- Confirm the conditions are satisfied to use a z-test for the hypothesis test to test the difference between two population proportions (5)
- 10.4.2 Calculate the Test Statistic - Independent Samples
 - Compute the value of the test statistic (z-value) for a hypothesis test to test the difference between two population proportions (26)
- 10.4.3 Two population hypothesis test for proportions (Independent Samples) - Critical Value/Rejection Region Approach
 - Determine the critical value(s) for a hypothesis test to test the difference between two population proportions in order to define rejection region(s) (5)
 - Make a conclusion and interpret the results for a hypothesis test to test the difference between two population proportions using the Critical Value/Rejection Region Approach (5)
- 10.4.4 Complete the steps of a Two population hypothesis test for proportions (Independent Samples) - Critical Value/Rejection Region Approach
 - Complete the steps of a Two population hypothesis test for proportions (Independent Samples) - Critical Value/Rejection Region Approach (5, 5, 26)
- 10.4.5 Two population hypothesis test for proportions (Independent Samples) - P-Value Approach
 - Determine the p-value for a hypothesis test to test the difference between two population proportions (5)
 - Make a conclusion and interpret the results for a hypothesis test to test the difference between two population proportions using the P-Value Approach (5)
- 10.4.6 Complete the steps of a Two population hypothesis test for proportions (Independent Samples) - P-Value Approach
 - Complete the steps of a Two population hypothesis test for proportions (Independent Samples) - P-Value Approach (5, 5, 5)
- 10.4.6-Calculator: Perform and Interpret a Two-Proportion Hypothesis Test with Technology
 - Perform and Interpret a Two-Proportion Hypothesis Test with Technology – Calculator
- 10.4.6-Excel: Perform and Interpret a Two-Proportion Hypothesis Test with Technology – Excel
 - Perform and Interpret a Two-Proportion Hypothesis Test with Technology - Excel

Chapter 11: Chi-Square Distributions

11.1 Introduction to the Chi-Square Distribution

- 11.1.1 Introduction to Chi-Square Distribution
 - Understand the properties of the chi-square distribution (5)
 - Distinguish between use cases of the chi-square tests (5)
- 11.1.1-Interactive: Introduction to Chi-Square Distribution
 - Understand the properties of the chi-square distribution – Technology Interactive

11.2 Chi-Square Tests

- 11.2.1 Chi-Square Goodness-of-Fit Test
 - Compute the value of the test statistic using the expected frequencies for a chi-square goodness-of-fit test (26)
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- Conduct and interpret a chi-square goodness-of-fit test (5, 5, 5, 26)
- 11.2.2 Chi-Square Independence Test
 - Compute the value of the test statistic using the expected frequencies for a chi-square independence test (5, 5)
 - Conduct and interpret a test of independence with the chi-square distribution (5, 5, 5, 5)
- 11.2.3 Chi-Square Homogeneity Test
 - Compute the value of the test statistic using the expected frequencies for a chi-square homogeneity test (5, 5)
 - Conduct and interpret a test for homogeneity with the chi-square distribution (5, 5, 5, 5)

Chapter 12: Linear Regression

12.1 Linear Regression Equations

- 12.1.1 Linear Regression Equations and Application
 - Understand properties of linear equations (40)
 - Understand the relationship between scatter plots and tables and determine patterns (5, 5, 5, 5)
 - Find the linear regression equation given a list of data points (5)
- 12.1.2 Uses of Linear Regression
 - Find and interpret the correlation coefficient (5)
 - Identifying the line of best fit (Least Squares Regression) (5, 5, 5)
 - Make predictions using a line of best fit (5, 5)
- 12.1.3 Outliers and Prediction Errors
 - Find outliers in a data set (5)
 - Determine the prediction errors for data values and trend lines (5, 26)
- 12.1.4 Correlation and Causation
 - Interpret the slope and y-intercept of the least squares regression line (5)
 - Understand the difference between correlation and causation (5)
- 12.1.5 Coefficient of Determination
 - Compute and interpret the sums of squares representing total, explained, and unexplained variation among y-values (5)
 - Compute and interpret the coefficient of determination (5)
- 12.1.2-Interactive: Identifying the line of best fit (Least Squares Regression)
 - Identifying the line of best fit (Least Squares Regression) – Technology Interactive (5, 5, 5)

12.2 Linear Regression with Technology

- 12.2.1-Calculator: Performing Linear Regressions with Technology
 - Calculate the correlation coefficient using Technology - Calculator
 - Determine the best fit linear regression equation using Technology - Calculator
 - 12.2.1-Excel: Performing Linear Regressions with Technology
 - Calculate the correlation coefficient using Technology - Excel
 - Determine the best fit linear regression equation using Technology – Excel
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12.3 Recognizing Multivariate Relationships

- 12.3.1 Multivariate Relationships
 - Identify applications where multiple regression can be performed (5)
 - Define the format for a multiple regression equation (5)
 - Make predictions using the multiple regression equation (5)

12.4 Multivariate Relationships with Technology

- 12.4.1-Calculator: Applying technology to determine the multiple regression equation with technology
 - Determine the multiple regression equation using Technology - Calculator
- 12.4.1-Excel: Applying technology to determine the multiple regression equation with technology
 - Determine the multiple regression equation using Technology - Excel

Chapter 13: Introduction to ANOVA tests

13.1 Setting up the one-way ANOVA test

- 13.1.1 Setting up the one-way ANOVA test
 - Determine appropriate situations for a one-way ANOVA test and identify the null and alternative hypotheses (5, 5)
 - Determine the degrees of freedom for the numerator and denominator for one-way ANOVA test (5)

13.2 Conduct a one-way ANOVA test - Critical Value Approach

- 13.2.1 Conduct a One-Way ANOVA test - Critical Value Approach
 - Determine the critical value and rejection region for one-way ANOVA test (5)
- 13.2.2 Calculate the Test Statistic - One-Way ANOVA
 - Calculate the test statistic for one-way ANOVA test (5, 5)

13.3 Performing an ANOVA test with Technology - Critical Value Method

- 13.3.1-Calculator: Performing an ANOVA test with Technology - Critical Value Method
 - Make a decision for the hypothesis test using critical value/rejection region method and interpret results – Calculator
- 13.3.1-Excel: Performing an ANOVA test with Technology - Critical Value Method
 - Make a decision for the hypothesis test using critical value/rejection region method and interpret results – Excel

13.4 Performing an ANOVA test with Technology – P-Value Approach

- 13.4.1-Calculator: Performing an ANOVA test with Technology – P-Value Approach
 - Make a decision for the hypothesis test using the p-value method and interpret results – Calculator
 - 13.4.1-Excel: Performing an ANOVA test with Technology – P-Value Approach
 - Make a decision for the hypothesis test using the p-value method and interpret results – Excel
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Corequisite Support for Statistics: A Targeted Review

Chapter 1: Arithmetic Basics for Statistics

1.1 Understanding Order of Operations

- Performing Order of Operations
 - Use order of operations

1.2 Rational Numbers

- Fractions
 - Write a fraction in lowest terms
 - Apply operations to fractions
 - Find proportions
- Decimal Basics
 - Round decimals (20)
 - Name decimals
 - Write decimals
 - Identify the number of significant digits
- Scientific Notation
 - Convert decimal notation to scientific notation
 - Convert scientific notation to decimal form
 - Interpret technology output that is in scientific notation - Calculator (10)
- Perform Operations with Decimals
 - Add and subtract two decimals
 - Divide decimals
 - Multiply decimals
 - Divide a decimal by another decimal
- Percentages
 - Find the percentage of a number
- Conversion Basics
 - Convert percents to fractions
 - Convert fractions to decimals
 - Convert decimals and fractions to percents

Chapter 2: Real Numbers and Algebra

2.1. Understanding Exponents and Square Roots

- Exponents
 - Understand exponent notation (11)
 - Use the product rule of exponents (11)
 - Use the quotient rule of exponents (11)
 - Use the power rule of exponents (11)
 - Evaluate expressions with e
 - Square Roots
 - Evaluate square roots
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- Apply square roots

2.2 Algebraic Expressions and Equations

- Algebraic Expressions
 - Identify expressions and equations
 - Evaluate algebraic expressions
 - Evaluate algebraic equations
- Like Terms in Algebra
 - Identify terms, coefficients, and like terms
 - Simplify expressions by combining like terms
- Translating Algebraic Expressions
 - Translate word phrases to algebraic expressions
 - Write word phrases from applications as algebraic expressions

Chapter 3: The Number Line

3.1 The Number Line Basics

- Understanding The Number Line
 - Locate position values in a number line
 - Locate decimals on the number line
 - Order decimals
 - Use interval notation with a number line

3.2. Equations and Inequalities on a Number Line

- Inequality Notation
 - Interpret inequality notation (20)
- Compound Inequalities
 - Find the distance from the middle value of an interval to its endpoints
 - Find the middle value for an interval given in either interval notation or as an inequality (10)

Chapter 4: Graphs

4.1 Introduction to Graphs

- Creating and Plotting Graphs
 - Identify the points on a graph
 - Identify plot points
 - Graph a line by plotting points
 - Graph a linear equation with x and y on the same side by plotting points

4.2 Linear Equations and Graphs

- Interpretations of Linear Functions
 - Represent a linear function in table form (40)
 - Determine whether a linear function is increasing, decreasing, or constant (40)
 - Solutions of Linear Equations
 - Verify solutions to an equation in two variables
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- Complete a table of solutions to a linear equation
 - Recognize the relation between the solutions of an equation and its graph
 - Graph Linear Equations with Intercepts
 - Identify the intercepts on a graph
 - Find the intercepts from an equation of a line
 - Construct graphs for linear functions
 - Graph a line using intercepts
- 4.3 Intercepts on a Graph
- Locating x- and y-intercepts
 - Graphing by x- and y-intercepts and find y given x
 - Find and interpret the y-intercept of a line (5)
- 4.4 Slope
- Linear Models and the Slope of a Line
 - Find and interpret a linear model
 - Identify the slope of a line from its graph
 - Identify the slope of horizontal or vertical lines
 - Graphing Lines with Slope and Applications of Slope
 - Identify the slope of a line between two points by using the slope formula
 - Graph lines when given a point and the slope
 - Determine the slope in applications

Chapter 5: Introduction to Probability

5.1 Basic Sets

- Venn Diagram Basics
 - Determine the intersection, union, and complement of two sets (9)

5.2 Introduction to Permutations and Combinations

- Factorials, Permutations and Combinations
 - Evaluate factorials (10)
 - Evaluate nPr and nCr (9)

5.3 Averages and Probability

- Mean and Standard Deviation
 - Apply summation notation
- Finding the Mean, Median, and Mode of a Set of Numbers
 - Determine the mean of a set of numbers
 - Identify the median of a set of numbers
 - Identify the mode of a set of numbers
- Calculating the Probability of an Event
 - Utilize the basic definition of probability

5.4 Binomial Probability

- Understanding the Process of Calculating a Binomial Probability
 - Evaluate the binomial probability formula (10)
 - Evaluate formulas for binomial distributions (5)
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- The Poisson Distribution Formula
 - Evaluate the Poisson formula (10)

Chapter 6: Data Collection

6.1 Measurement Systems

- Unit Conversions in the US System
 - Make a unit conversion in the US system
 - Use mixed units in the US System
- Unit Conversions in the Metric System
 - Make a unit conversion in the metric system
 - Use mixed units in the metric system
- Unit Conversions Between the US and Metric System
 - Convert between the US and the metric systems of measurement

6.2 Classification of Data

- Variables, Data and Units of Measurement
 - Identify variables in context
 - Classifying data as a type of number (10)

Chapter 7: Displaying Data

7.1 Visualizing Data

- Frequency Distribution
 - Tally values for frequency distribution (10)
 - Calculate relative frequencies (10)

Chapter 8: Normal Probability Distribution

8.1 The Bell Curve

- Properties of a Normal Distribution
 - Evaluate formulas for normal probability distributions
 - Find area within normal distributions (3)

Chapter 9: Confidence Intervals

9.1 Levels of Confidence

- Common Confidence Levels
 - Write and interpret three different forms of intervals (10)

9.2 Population Means and Confidence Intervals

- Confidence Intervals for Means
 - Evaluate formulas used for confidence intervals for population means (5, 5)
 - Evaluate formulas used for confidence intervals for comparing two population means (5)

9.3 Proportions and Confidence Intervals

- Confidence Intervals for Proportions
 - Evaluate formulas used for confidence intervals for proportions (3)
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- Evaluate formulas used for confidence intervals for the difference of two proportions (10)

Chapter 10: Hypothesis Testing

10.1 Population Means

- Hypothesis Testing for Means
 - Evaluate formulas for hypothesis testing for means (10)
 - Evaluate formulas for hypothesis testing for comparing two population means (5, 5)

10.2 Proportions

- Hypothesis Testing for Proportions
 - Evaluate formulas for hypothesis testing for proportions (10)
 - Evaluate formulas for two-sample hypothesis testing for proportions (10)

Chapter 11: Chi-Square

11.1 Categorical Variables

- Chi-Square Testing with Categorical Variables
 - Evaluating formulas for testing with categorical variables (10)
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