

## Index

### A

#### Adding probabilities

4.3: The Addition and Multiplication Rules of Probability

#### ANOVA

11.3.1: One-Way ANOVA

### B

#### bar graph

2.3.1: Stem-and-Leaf Graphs (Stemplots), Line Graphs, and Bar Graphs

#### bar graphs

2.3: Other Types of Graphs

#### Bernoulli trial

5.3: Binomial Distribution

#### binomial probability distribution

5.3: Binomial Distribution

5.4.1: Binomial Distribution Formula

7.4: Confidence Intervals and Sample Size for Proportions

#### blinding

1.4: Experimental Design and Ethics

#### box plots

3.4: Exploratory Data Analysis

### C

#### central limit theorem

6.4: Normal Approximation to the Binomial Distribution

#### Chebyshev's Theorem

3.2.2: The Empirical Rule and Chebyshev's Theorem

#### Circular Permutations

4.4.2: Permutations with Similar Elements

#### cluster sample

1.4.2: Observational Studies and Sampling Strategies

#### cluster sampling

1.2: Variables and Types of Data

#### coefficient of determination

10.2: The Regression Equation

#### Combinations

4.4.3: Combinations

#### Comparing two population means

9.2: Inferences for Two Population Means- Large, Independent Samples

9.3: Inferences for Two Population Means - Unknown Standard Deviations

#### Comparing Two Population Proportions

9.5: Inferences for Two Population Proportions

#### complement

4.1.2: Terminology

4.2: Independent and Mutually Exclusive Events

#### conditional probability

4.1.2: Terminology

#### Confidence Interval

8.1: Steps in Hypothesis Testing

#### CONFIDENCE INTERVAL FOR THE DIFFERENCE BETWEEN TWO POPULATION PROPORTIONS

9.5: Inferences for Two Population Proportions

#### confounding variable

1.4.2: Observational Studies and Sampling Strategies

#### contingency table

4.3.1: Contingency Tables

11.2.1: Test of Independence

#### continuous data

1.2: Variables and Types of Data

#### control group

1.4: Experimental Design and Ethics

#### cumulative probability distributions

6.0: Introduction

#### cumulative relative frequency

1.2.1: Levels of Measurement

2.1: Organizing Data - Frequency Distributions

### D

#### Decision

8.1.4: Rare Events, the Sample, Decision and Conclusion

#### direction of a relationship between the variables

10.1.2: Scatter Plots

#### discrete data

1.2: Variables and Types of Data

#### dot plot

2.3.2: Dot Plots

### E

#### Empirical Rule

3.2.2: The Empirical Rule and Chebyshev's Theorem

#### Equal variance

10.1: Testing the Significance of the Correlation Coefficient

#### ethics

1.4: Experimental Design and Ethics

#### event

4.1.2: Terminology

#### expected value

5.2: Mean or Expected Value and Standard Deviation

#### experimental unit

1.4: Experimental Design and Ethics

#### explanatory variable

1.4: Experimental Design and Ethics

#### extrapolation

10.2.1: Prediction

### F

#### F distribution

11.3: Prelude to F Distribution and One-Way ANOVA

#### factorial

4.4.1: Permutations

5.4.1: Binomial Distribution Formula

#### Fisher's Exact Test

12.5: Fisher's Exact Test

#### frequency

1.2.1: Levels of Measurement

2.1: Organizing Data - Frequency Distributions

#### Frequency Polygons

2.2.1: Frequency Polygons and Time Series Graphs

#### frequency table

1.2.1: Levels of Measurement

2.1: Organizing Data - Frequency Distributions

### G

#### goodness of fit

11.1: Goodness-of-Fit Test

### H

#### Histograms

2.2.1: Frequency Polygons and Time Series Graphs

#### homogeneity

11.2.2: Test for Homogeneity

#### hypothesis testing

8.1: Steps in Hypothesis Testing

8.1.1: Null and Alternative Hypotheses

8.1.3: Distribution Needed for Hypothesis Testing

8.1.5: Additional Information on Hypothesis Tests

8.2: Hypothesis Test Examples for Means

8.3: Hypothesis Test Examples for Means with Unknown Standard Deviation

8.4: Hypothesis Test Examples for Proportions

### I

#### independent events

4.2: Independent and Mutually Exclusive Events

4.3: The Addition and Multiplication Rules of Probability

11.2.1: Test of Independence

#### inferential statistics

7.1: Confidence Intervals

#### Institutional Review Board

1.4: Experimental Design and Ethics

#### interpolation

10.2.1: Prediction

### K

#### Kruskal-Wallis Test

12.11: Kruskal-Wallis Test

### L

#### Law of Large Numbers

6.4: Normal Approximation to the Binomial Distribution

#### level of measurement

1.2.1: Levels of Measurement

2.1: Organizing Data - Frequency Distributions

#### line graph

2.3.1: Stem-and-Leaf Graphs (Stemplots), Line Graphs, and Bar Graphs

#### linear correlation coefficient

10.1: Testing the Significance of the Correlation Coefficient

10.2: The Regression Equation

#### linear equations

10.1.1: Review- Linear Equations

#### LINEAR REGRESSION MODEL

10.2: The Regression Equation

#### lurking variable

1.4: Experimental Design and Ethics

### M

#### margin of error

7.2: Confidence Intervals for the Mean with Known Standard Deviation

#### mean

3.1.1: Skewness and the Mean, Median, and Mode

5.2: Mean or Expected Value and Standard Deviation

## median

- 3.1: Measures of the Center of the Data
- 3.1.1: Skewness and the Mean, Median, and Mode
- 3.3: Measures of Position

## mode

- 3.1: Measures of the Center of the Data
- 3.1.1: Skewness and the Mean, Median, and Mode

## multiplication rule

- 4.5: Probability And Counting Rules

## Multiplying probabilities

- 4.3: The Addition and Multiplication Rules of Probability

## mutually exclusive

- 4.2: Independent and Mutually Exclusive Events
- 4.3: The Addition and Multiplication Rules of Probability

## N

### Normal Approximation to the Binomial Distribution

- 5.4.1: Binomial Distribution Formula
- 6.4: Normal Approximation to the Binomial Distribution

### normal distribution

- 6.2: Applications of the Normal Distribution
- 6.3: The Central Limit Theorem

## O

### outcome

- 4.1.2: Terminology

### outliers

- 3.3: Measures of Position
- 10.3: Outliers

## P

### paired difference samples

- 9.4: Inferences for Two Population Means - Paired Samples

### Paired Samples

- 9.4: Inferences for Two Population Means - Paired Samples

### parameter

- 1.1: Descriptive and Inferential Statistics
- 4.1: Sample Spaces and Probability

### Pareto chart

- 1.2: Variables and Types of Data

### Pareto charts

- 2.3: Other Types of Graphs

### permutation

- 4.4.1: Permutations

### pie charts

- 2.3: Other Types of Graphs

### placebo

- 1.3: Data Collection and Sampling Techniques
- 1.4: Experimental Design and Ethics

### pooled variance

- 9.3: Inferences for Two Population Means - Unknown Standard Deviations
- 11.3.2: The F Distribution and the F-Ratio

### population

- 1.1: Descriptive and Inferential Statistics
- 4.1: Sample Spaces and Probability

### population mean

- 3.1: Measures of the Center of the Data

### Population Standard Deviation

- 3.2: Measures of Variation

## power of the test

- 8.1.2: Outcomes and the Type I and Type II Errors
- 8.1.5: Additional Information on Hypothesis Tests
- 8.2: Hypothesis Test Examples for Means
- 8.3: Hypothesis Test Examples for Means with Unknown Standard Deviation
- 8.4: Hypothesis Test Examples for Proportions

## prediction

- 10.2.1: Prediction

## probability

- 1.1: Descriptive and Inferential Statistics
- 4.1: Sample Spaces and Probability

## probability distribution function

- 5.1: Probability Distribution Function (PDF) for a Discrete Random Variable
- 6.2: Applications of the Normal Distribution

## prospective study

- 1.4.2: Observational Studies and Sampling Strategies

## Q

### Qualitative Data

- 1.2: Variables and Types of Data

### Quantitative Data

- 1.2: Variables and Types of Data

### quartiles

- 3.3: Measures of Position

## R

### random assignment

- 1.4: Experimental Design and Ethics

### Randomization Association

- 12.4: Randomization Association

### Ranked variables

- 12.12: Spearman Rank Correlation

### rare events

- 8.1.4: Rare Events, the Sample, Decision and Conclusion

### response variable

- 1.4: Experimental Design and Ethics

### Retrospective studies

- 1.4.2: Observational Studies and Sampling Strategies

### rounding

- 1.2.1: Levels of Measurement
- 2.1: Organizing Data - Frequency Distributions

## S

### sample mean

- 3.1: Measures of the Center of the Data

### sample space

- 4.1.2: Terminology

### sample Standard Deviation

- 3.2: Measures of Variation

### sampling

- 1: The Nature of Statistics

### Sampling Bias

- 1.2: Variables and Types of Data

### sampling distribution of the mean

- 6.3: The Central Limit Theorem

### Sampling Error

- 1.2: Variables and Types of Data

### sampling with replacement

- 1.2: Variables and Types of Data
- 4.2: Independent and Mutually Exclusive Events
- 4.3.2: Tree and Venn Diagrams

## sampling without replacement

- 1.2: Variables and Types of Data
- 4.2: Independent and Mutually Exclusive Events
- 4.3.2: Tree and Venn Diagrams

## scatter plot

- 10.1.2: Scatter Plots

## significance level

- 8.1.4: Rare Events, the Sample, Decision and Conclusion

## simple random sampling

- 1.4.2: Observational Studies and Sampling Strategies

## Skewed

- 3.1.1: Skewness and the Mean, Median, and Mode
- 3.4: Exploratory Data Analysis

## slope

- 10.1.1: Review- Linear Equations

## Spearman Rank Correlation

- 12.12: Spearman Rank Correlation

## standard deviation

- 3.2: Measures of Variation
- 5.2: Mean or Expected Value and Standard Deviation

## Standard Error of the Mean

- 6.3: The Central Limit Theorem

## standard normal distribution

- 6.1: The Normal Distribution
- 6.1.1: The Standard Normal Distribution

## statistic

- 1.1: Descriptive and Inferential Statistics
- 4.1: Sample Spaces and Probability

## stemplot

- 2.3.1: Stem-and-Leaf Graphs (Stemplots), Line Graphs, and Bar Graphs

## stratified sampling

- 1.4.2: Observational Studies and Sampling Strategies

## strength of a relationship between the variables

- 10.1.2: Scatter Plots

## T

### test for homogeneity

- 11.2.2: Test for Homogeneity

### The alternative hypothesis

- 8.1.1: Null and Alternative Hypotheses

### The AND Event

- 4.1.2: Terminology

### The null hypothesis

- 8.1.1: Null and Alternative Hypotheses

### The Or Event

- 4.1.2: Terminology

### The OR of Two Events

- 4.2: Independent and Mutually Exclusive Events

### Time Series Graphs

- 2.2.1: Frequency Polygons and Time Series Graphs

### treatments

- 1.4: Experimental Design and Ethics

### tree diagram

- 4.3.2: Tree and Venn Diagrams

### tree diagrams

- 4.5: Probability And Counting Rules

### type I error

- 8.1.2: Outcomes and the Type I and Type II Errors

### type II error

- 8.1.2: Outcomes and the Type I and Type II Errors

## V

### variable

- [1.1: Descriptive and Inferential Statistics](#)
- [4.1: Sample Spaces and Probability](#)

variation due to error or unexplained

variation

- [11.3.2: The F Distribution and the F-Ratio](#)

variation due to treatment or explained

variation

- [11.3.2: The F Distribution and the F-Ratio](#)

Venn diagram

- [4.3.2: Tree and Venn Diagrams](#)

## W

Wilcoxon Rank Sum test

- [12.6: Rank Randomization Two Conditions](#)