

Index

A

Adding probabilities

3.4: Two Basic Rules of Probability

ANOVA

12.2: One-Way ANOVA

B

bar graph

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

Bernoulli trial

4.4: Binomial Distribution

4.5: Geometric Distribution

binomial probability distribution

4.4: Binomial Distribution

8.4: A Population Proportion

blinding

1.5: Experimental Design and Ethics

box plots

2.5: Box Plots

C

central limit theorem

7.4: Using the Central Limit Theorem

central limit theorem for sums

7.3: The Central Limit Theorem for Sums

cluster sampling

1.3: Data, Sampling, and Variation in Data and Sampling

coefficient of determination

13.4: The Regression Equation

Cohen's Standards

10.2: Two Population Means with Unknown Standard Deviations

Comparing two population means

10.3: Two Population Means with Known Standard Deviations

Comparing Two Population Proportions

10.4: Comparing Two Independent Population Proportions

complement

3.2: Terminology

3.3: Independent and Mutually Exclusive Events

conditional probability

3.2: Terminology

Confidence Interval

9.1: Prelude to Hypothesis Testing

contingency table

3.5: Contingency Tables

11.4: Test of Independence

continuous data

1.3: Data, Sampling, and Variation in Data and Sampling

control group

1.5: Experimental Design and Ethics

cumulative probability distributions

5.1: Introduction

cumulative relative frequency

1.4: Frequency, Frequency Tables, and Levels of Measurement

D

decay parameter

5.4: The Exponential Distribution

Decision

9.5: Rare Events, the Sample, Decision and Conclusion

degrees of freedom

10.2: Two Population Means with Unknown

Standard Deviations

direction of a relationship between the variables

13.3: Scatter Plots

discrete data

1.3: Data, Sampling, and Variation in Data and Sampling

Distribution for the differences

10.4: Comparing Two Independent Population Proportions

E

Equal variance

13.5: Testing the Significance of the Correlation Coefficient

ethics

1.5: Experimental Design and Ethics

event

3.2: Terminology

expected value

4.3: Mean or Expected Value and Standard Deviation

experimental unit

1.5: Experimental Design and Ethics

explanatory variable

1.5: Experimental Design and Ethics

exponential distribution

5.4: The Exponential Distribution

extrapolation

13.6: Prediction

F

frequency

1.4: Frequency, Frequency Tables, and Levels of Measurement

Frequency Polygons

2.3: Histograms, Frequency Polygons, and Time Series Graphs

frequency table

1.4: Frequency, Frequency Tables, and Levels of Measurement

G

geometric distribution

4.5: Geometric Distribution

goodness of fit

11.3: Goodness-of-Fit Test

H

Histograms

2.3: Histograms, Frequency Polygons, and Time Series Graphs

homogeneity

11.5: Test for Homogeneity

Hypergeometric Distribution

4.6: Hypergeometric Distribution

hypothesis testing

9.1: Prelude to Hypothesis Testing

9.2: Null and Alternative Hypotheses

9.4: Distribution Needed for Hypothesis Testing

9.6: Additional Information and Full Hypothesis Test Examples

I

independent events

3.3: Independent and Mutually Exclusive Events

3.4: Two Basic Rules of Probability

11.4: Test of Independence

inferential statistics

8.1: Prelude to Confidence Intervals

Institutional Review Board

1.5: Experimental Design and Ethics

interpolation

13.6: Prediction

interval of interest

4.7: Poisson Distribution

L

Law of Large Numbers

7.4: Using the Central Limit Theorem

level of measurement

1.4: Frequency, Frequency Tables, and Levels of Measurement

line graph

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

linear correlation coefficient

13.4: The Regression Equation

13.5: Testing the Significance of the Correlation Coefficient

linear equations

13.2: Linear Equations

LINEAR REGRESSION MODEL

13.4: The Regression Equation

lurking variable

1.5: Experimental Design and Ethics

M

margin of error

8.2: A Single Population Mean using the Normal Distribution

matched samples

10.5: Matched or Paired Samples

mean

2.7: Skewness and the Mean, Median, and Mode

4.3: Mean or Expected Value and Standard Deviation

mean for sums

7.3: The Central Limit Theorem for Sums

median

2.4: Measures of the Location of the Data

2.6: Measures of the Center of the Data

2.7: Skewness and the Mean, Median, and Mode

memoryless property

5.4: The Exponential Distribution

mode

2.6: Measures of the Center of the Data

2.7: Skewness and the Mean, Median, and Mode

Multiplying probabilities

3.4: Two Basic Rules of Probability

mutually exclusive

3.3: Independent and Mutually Exclusive Events

3.4: Two Basic Rules of Probability

N

Normal Approximation to the Binomial Distribution

7.4: Using the Central Limit Theorem

normal distribution

- 6.3: Using the Normal Distribution
- 6.4: Normal Distribution - Lap Times (Worksheet)
- 6.5: Normal Distribution - Pinkie Length (Worksheet)
- 7.2: The Central Limit Theorem for Sample Means (Averages)

O

outcome

- 3.2: Terminology

outliers

- 2.4: Measures of the Location of the Data
- 13.7: Outliers

P

Paired Samples

- 10.5: Matched or Paired Samples

parameter

- 1.2: Definitions of Statistics, Probability, and Key Terms

Pareto chart

- 1.3: Data, Sampling, and Variation in Data and Sampling

placebo

- 1.5: Experimental Design and Ethics

Poisson distribution

- 4.7: Poisson Distribution
- 5.4: The Exponential Distribution

Pooled Proportion

- 10.4: Comparing Two Independent Population Proportions

pooled variance

- 12.3: The F Distribution and the F-Ratio

population

- 1.2: Definitions of Statistics, Probability, and Key Terms

population mean

- 2.6: Measures of the Center of the Data

Population Standard Deviation

- 2.8: Measures of the Spread of the Data

power of the test

- 9.3: Outcomes and the Type I and Type II Errors
- 9.6: Additional Information and Full Hypothesis Test Examples

prediction

- 13.6: Prediction

probability

- 1.2: Definitions of Statistics, Probability, and Key Terms

probability distribution function

- 4.2: Probability Distribution Function (PDF) for a Discrete Random Variable
- 6.3: Using the Normal Distribution

Q

Qualitative Data

- 1.3: Data, Sampling, and Variation in Data and Sampling

Quantitative Data

- 1.3: Data, Sampling, and Variation in Data and Sampling

quartiles

- 2.4: Measures of the Location of the Data

R

random assignment

- 1.5: Experimental Design and Ethics

rare events

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

reliability

- 5.4: The Exponential Distribution

response variable

- 1.5: Experimental Design and Ethics

rounding

- 1.4: Frequency, Frequency Tables, and Levels of Measurement

S

sample mean

- 2.6: Measures of the Center of the Data

sample space

- 3.2: Terminology

sample Standard Deviation

- 2.8: Measures of the Spread of the Data

Sampling Bias

- 1.3: Data, Sampling, and Variation in Data and Sampling

sampling distribution of the mean

- 7.2: The Central Limit Theorem for Sample Means (Averages)

Sampling Error

- 1.3: Data, Sampling, and Variation in Data and Sampling

sampling with replacement

- 1.3: Data, Sampling, and Variation in Data and Sampling
- 3.3: Independent and Mutually Exclusive Events
- 3.6: Tree and Venn Diagrams

sampling without replacement

- 1.3: Data, Sampling, and Variation in Data and Sampling
- 3.3: Independent and Mutually Exclusive Events
- 3.6: Tree and Venn Diagrams

scatter plot

- 13.3: Scatter Plots

significance level

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

Skewed

- 2.5: Box Plots
- 2.7: Skewness and the Mean, Median, and Mode

slope

- 13.2: Linear Equations

standard deviation

- 2.8: Measures of the Spread of the Data
- 4.3: Mean or Expected Value and Standard Deviation

Standard deviation for Sums

- 7.3: The Central Limit Theorem for Sums

standard error

- 10.2: Two Population Means with Unknown Standard Deviations

Standard Error of the Mean

- 7.2: The Central Limit Theorem for Sample Means (Averages)

standard normal distribution

- 6.1: Prelude to The Normal Distribution
- 6.2: The Standard Normal Distribution

statistic

- 1.2: Definitions of Statistics, Probability, and Key Terms

stemplot

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

strength of a relationship between the variables

- 13.3: Scatter Plots

T

test for homogeneity

- 11.5: Test for Homogeneity

test statistic

- 10.5: Matched or Paired Samples

The alternative hypothesis

- 9.2: Null and Alternative Hypotheses

The AND Event

- 3.2: Terminology

the central limit theorem

- 7: The Central Limit Theorem

The null hypothesis

- 9.2: Null and Alternative Hypotheses

The Or Event

- 3.2: Terminology

The OR of Two Events

- 3.3: Independent and Mutually Exclusive Events

Time Series Graphs

- 2.3: Histograms, Frequency Polygons, and Time Series Graphs

treatments

- 1.5: Experimental Design and Ethics

tree diagram

- 3.6: Tree and Venn Diagrams

type I error

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

type II error

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

V

variable

- 1.2: Definitions of Statistics, Probability, and Key Terms

variation due to error or unexplained variation

- 12.3: The F Distribution and the F-Ratio

variation due to treatment or explained variation

- 12.3: The F Distribution and the F-Ratio

Venn diagram

- 3.6: Tree and Venn Diagrams