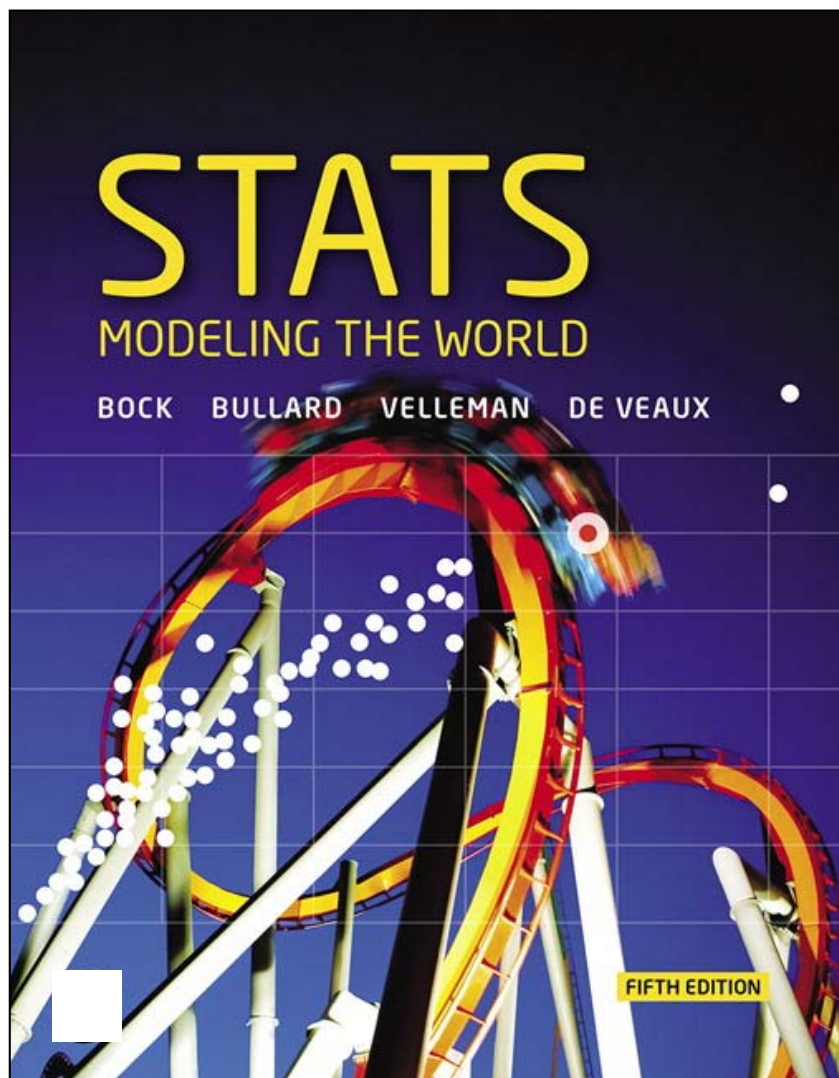


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Enduring Understanding	Topic/Learning Objective	
UNIT 1 Exploring One-Variable Data		
VAR-1 Given that variation may be random or not, conclusions are uncertain.	1.1 Introducing Statistics: What Can We Learn from Data?	
	VAR-1.A Identify questions to be answered, based on variation in one-variable data.	SE/TE: 3-4, 7, 10-12
	1.2 The Language of Variation: Variables	
	VAR-1.B Identify variables in a set of data.	SE/TE: 4, 6, 7, 11-12, 22
	VAR-1.C Classify types of variables.	SE/TE: 5-7, 11-12
UNC-1 Graphical representations and statistics allow us to identify and represent key features of data.	1.3 Representing a Categorical Variable with Tables	
	UNC-1.A Represent categorical data using frequency or relative frequency tables.	SE/TE: 15-16, 31 (#3)
	UNC-1.B Describe categorical data represented in frequency or relative tables.	SE/TE: 16, 31 (#3), 33 (#11-14)
	1.4 Representing a Categorical Variable with Graphs	
	UNC-1.C Represent categorical data graphically.	SE/TE: 16-18, 32-33
	UNC-1.D Describe categorical data represented graphically.	SE/TE: 16-18, 31-38
	UNC-1.E Compare multiple sets of categorical data.	SE/TE: 18-19, 20-21, 31-38
	1.5 Representing a Quantitative Variable with Graphs	
	UNC-1.F Classify types of quantitative variables.	SE/TE: 40-41, 43-45, 46, 68-77
UNC-1.G Represent quantitative data graphically.	SE/TE: 41-46, 70 (#13-14)	

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Enduring Understanding	Topic/Learning Objective	
(Continued) UNC-1 Graphical representations and statistics allow us to identify and represent key features of data.	1.6 Describing the Distribution of a Quantitative Variable	
	UNC-1.H Describe the characteristics of quantitative data distributions.	SE/TE: 46-48, 55-58, 60-61, 68-77
	1.7 Summary Statistics for a Quantitative Variable	
	UNC-1.I Calculate measures of center and position for quantitative data.	SE/TE: 49-50, 51-55, 68-77
	UNC-1.J Calculate measures of variability for quantitative data.	SE/TE: 50-52, 58-59, 68-76
	UNC-1.K Explain the selection of a particular measure of center and/or variability for describing a set of quantitative data.	SE/TE: 56-59, 71 (#17-19)
	1.8 Graphical Representations of Summary Statistics	
	UNC-1.L Represent summary statistics for quantitative data graphically.	SE/TE: 59-61, 70 (#13-14), 73 (#38-39), 74 (#40, 44-46), 75 (#48-50)
	UNC-1.M Describe summary statistics of quantitative data represented graphically.	SE/TE: 49-54, 55-57, 58-59, 60-61, 69-77
	1.9 Comparing Distributions of a Quantitative Variable	
	UNC-1.N Compare graphical representations for multiple sets of quantitative data.	SE/TE: 79-84, 85-86, 91-95, 98-101
	UNC-1.O Compare summary statistics for multiple sets of quantitative data.	SE/TE: 81, 82-83, 92-93, 96-97
	VAR-2 The normal distribution can be used to represent some population distributions.	1.10 The Normal Distribution
VAR-2.A Compare a data distribution to the normal distribution model.		SE/TE: 109-111, 112-113, 121-123, 128-133
VAR-2.B Determine proportions and percentiles from a normal distribution.		SE/TE: 110-111, 112-113, 113-116, 128-133

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Enduring Understanding	Topic/Learning Objective	
	VAR-2.C Compare measures of relative position in data sets.	SE/TE: 105-107, 112-120, 129-133
UNIT 2 Exploring Two-Variable Data		
VAR-1 Given that variation may be random or not, conclusions are uncertain.	2.1 Introducing Statistics: Are Variables Related?	
	VAR-1.D Identify questions to be answered about possible relationships in data.	SE/TE: 148, 150
UNC-1 Graphical representations and statistics allow us to identify and represent key features of data.	2.2 Representing Two Categorical Variables	
	UNC-1.P Compare numerical and graphical representations for two categorical variables.	SE/TE: 149-150, 152
	2.3 Statistics for Two Categorical Variables	
	UNC-1.Q Calculate statistics for two categorical variables.	SE/TE: 152-154, 154-156, 168-170
UNC-1 Graphical representations and statistics allow us to identify and represent key features of data.	UNC-1.R Compare statistics for two categorical variables.	SE/TE: 152-154, 154-155, 155-156, 157-159, 164-170
	2.4 Representing the Relationship Between Two Quantitative Variables	
UNC-1 Graphical representations and statistics allow us to identify and represent key features of data.	UNC-1.S Represent bivariate quantitative data using scatterplots.	SE/TE: 151-152, 168 (#37-38), 169 (#42-43), 170 (#44)
	DAT-1 Regression models may allow us to predict responses to changes in an explanatory variable.	SE/TE: 148-151, 152-153, 164-165
DAT-1 Regression models may allow us to predict responses to changes in an explanatory variable.	2.5 Correlation	
	DAT-1.B Determine the correlation for a linear relationship.	SE/TE: 152-156, 166 (#19), 168-170
	DAT-1.C Interpret the correlation for a linear relationship.	SE/TE: 156-157, 166-170

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Enduring Understanding	Topic/Learning Objective	
(Continued) DAT-1 Regression models may allow us to predict responses to changes in an explanatory variable.	2.6 Linear Regression Models	
	DAT-1.D Calculate a predicted response value using a linear regression model.	SE/TE: 173, 175-176, 180-181, 196 (#16, 18), 198 (#29-31)
	2.7 Residuals	
	DAT-1.E Represent differences between measured and predicted responses using residual plots.	SE/TE: 173, 180-181, 198 (#37), 199 (#38)
	DAT-1.F Describe the form of association of bivariate data using residual plots.	SE/TE: 173, 181, 183, 185, 187-188, 191, 196 (#11-12), 197 (#23), 198 (#37), 199 (#39), 202 (#52)
	2.8 Least Squares Regression	
	DAT-1.G Estimate parameters for the least-squares regression line model.	SE/TE: 173-174, 183-185, 185-187, 199 (#41, 42)
	DAT-1.H Interpret coefficients for the least-squares regression line model.	SE/TE: 176-177, 179-180, 189-190
	2.9 Analyzing Departures from Linearity	
	DAT-1.I Identify influential points in regression.	SE/TE: 210-212, 221 (#17-19)
	DAT-1.J Calculate a predicted response using a least squares regression line for a transformed data set.	SE/TE: 229-230, 235-237, 243-250

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Enduring Understanding	Topic/Learning Objective	
UNIT 3 Collecting Data		
VAR-1 Given that variation may be random or not, conclusions are uncertain.	3.1 Introducing Statistics: Do the Data We Collected Tell the Truth?	
	VAR-1.E Identify questions to be answered about data collection methods.	SE/TE: 4-5, 279, 290-291, 199 (#23), 300 (#25-26)
DAT-2 The way we collect data influences what we can and cannot say about a population.	3.2 Introduction to Planning a Study	
	DAT-2.A Identify the type of a study.	SE/TE: 267, 278-279, 290-291, 303, 305
	DAT-2.B Identify appropriate generalizations and determinations based on observational studies.	SE/TE: 303-304
	3.3 Random Sampling and Data Collection	
	DAT-2.C Identify a sampling method, given a description of a study.	SE/TE: 280, 281-283, 283-290
	DAT-2.D Explain why a particular sampling method is or is not appropriate for a given situation.	SE/TE: 292-294
	3.4 Potential Problems with Sampling	
	DAT-2.E Identify potential sources of bias in sampling methods.	SE/TE: 279, 294
VAR-3 Well-designed experiments can establish evidence of causal relationships.	3.5 Introduction to Experimental Design	
	VAR-3.A Identify the components of an experiment.	SE/TE: 305-306, 309-310
	VAR-3.B Describe elements of a well-designed experiment.	SE/TE: 306-309, 310-311
	VAR-3.C Compare experimental designs and methods.	SE/TE: 312-320

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Enduring Understanding	Topic/Learning Objective	
(Continued) VAR-3 Well-designed experiments can establish evidence of causal relationships.	3.6 Selecting an Experimental Design	
	VAR-3.D Explain why a particular experimental design is appropriate.	SE/TE: 312-320
	3.7 Inference and Experiments	
	VAR-3.E Interpret the results of a well-designed experiment.	SE/TE: 309-310, 329 (#47), 330 (#50)
UNIT 4 Probability, Random Variables, and Probability Distributions		
VAR-1 Given that variation may be random or not, conclusions are uncertain.	4.1 Introducing Statistics: Random and Non-Random Patterns?	
	VAR-1.F Identify questions suggested by patterns in data.	SE/TE: 267-269, 270-271
UNC-2 Simulation allows us to anticipate patterns in data.	4.2 Estimating Probabilities Using Simulation	
	UNC-2.A Estimate probabilities using simulation.	SE/TE: 353-355, 358, 360 (#39, 40), 375
VAR-4 The likelihood of a random event can be quantified.	4.3 Introduction to Probability	
	VAR-4.A Calculate probabilities for events and their complements.	SE/TE: 344, 346, 348-349, 357 (#11-14), 358 (#23-26)
	VAR-4.B Interpret probabilities for events.	SE/TE: 349, 357 (#11, 12), 358 (#13-14, 23, 24), 359 (#25, 26)
	4.4 Mutually Exclusive Events	
	VAR-4.C Explain why two events are (or are not) mutually exclusive.	SE/TE: 349, 360, 370-371, 372-373
	4.5 Conditional Probability	
	VAR-4.D Calculate conditional probabilities.	SE/TE: 366-368
	4.6 Independent Events and Unions of Events	
VAR-4.E Calculate probabilities for independent events and for the union of two events.	SE/TE: 344, 350-352, 363-366, 368-370	

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Enduring Understanding	Topic/Learning Objective	
VAR-5 Probability distributions may be used to model variation in populations.	4.7 Introduction to Random Variables and Probability Distributions	
	VAR-5.A Represent the probability distribution for a discrete random variable.	SE/TE: 389-390
	VAR-5.B Interpret a probability distribution.	SE/TE: 390, 406-407
	4.8 Mean and Standard Deviation of Random Variables	
	VAR-5.C Calculate parameters for a discrete random variable.	SE/TE: 391-394, 394-395
	VAR-5.D Interpret parameters for a discrete random variable.	SE/TE: 392-393, 394
	4.9 Combining Random Variables	
	VAR-5.E Calculate parameters for linear combinations of random variables.	SE/TE: 394-398
	VAR-5.F Describe the effects of linear transformations of parameters of random variables.	SE/TE: 399-402, 402-403
	UNC-3 Probabilistic reasoning allows us to anticipate patterns in data.	4.10 Introduction to the Binomial Distribution
UNC-3.A Estimate probabilities of binomial random variables using data from a simulation.		SE/TE: 416-419, 428 (#3), 429 (#4-6)
UNC-3.B Calculate probabilities for a binomial distribution.		SE/TE: 418-419, 428-430
4.11 Parameters for a Binomial Distribution		
UNC-3.C Calculate parameters for a binomial distribution.		SE/TE: 418-419, 428-430
UNC-3.D Interpret probabilities and parameters for a binomial distribution.		SE/TE: 418-419, 428-430

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Enduring Understanding	Topic/Learning Objective	
(Continued) UNC-3 Probabilistic reasoning allows us to anticipate patterns in data.	4.12 The Geometric Distribution	
	UNC-3.E Calculate probabilities for geometric random variables.	SE/TE: 413-414, 414-416
	UNC-3.F Calculate parameters of a geometric distribution.	SE/TE: 413-416
	UNC-3.G Interpret probabilities and parameters for a geometric distribution.	SE/TE: 413-416, 428-430
UNIT 5 Sampling Distributions		
VAR-1 Given that variation may be random or not, conclusions are uncertain.	5.1 Introducing Statistics: Why Is My Sample Not Like Yours?	
	VAR-1.G Identify questions suggested by variation in statistics for samples collected from the same population.	SE/TE: 443, 445
VAR-6 The normal distribution may be used to model variation.	5.2 The Normal Distribution, Revisited	
	VAR-6.A Calculate the probability that a particular value lies in a given interval of a normal distribution.	SE/TE: 121-122, 122-123, 132, 443-446, 449-450, 451-452
	VAR-6.B Determine the interval associated with a given area in a normal distribution.	SE/TE: 449-450, 451-452
	VAR-6.C Determine the appropriateness of using the normal distribution to approximate probabilities for unknown distributions.	SE/TE: 447-448

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Enduring Understanding	Topic/Learning Objective	
UNC-3 Probabilistic reasoning allows us to anticipate patterns in data.	5.3 The Central Limit Theorem	
	UNC-3.H Estimate sampling distributions using simulation.	SE/TE: 452-455, 456-457, 463-470
	5.4 Biased and Unbiased Point Estimates	
	UNC-3.I Explain why an estimator is or is not unbiased.	SE/TE: 455-457
	UNC-3.J Calculate estimates for a population parameter.	SE/TE: 455-457, 463-470
	5.5 Sampling Distributions for Sample Proportions	
	UNC-3.K Determine parameters of a sampling distribution for sample proportions.	SE/TE: 448-450, 463-470
	UNC-3.L Determine whether a sampling distribution for a sample proportion can be described as approximately normal.	SE/TE: 451-452, 463-470
	UNC-3.M Interpret probabilities and parameters for a sampling distribution for a sample proportion.	SE/TE: 448-450, 463-470
	5.6 Sampling Distributions for Differences in Sample Proportions	
	UNC-3.N Determine parameters of a sampling distribution for a difference in sample proportions.	SE/TE: 544-545, 547, 548-549, 551-554, 555, 559-563
	UNC-3.O Determine whether a sampling distribution for a difference of sample proportions can be described as approximately normal.	SE/TE: 546-547, 548-549, 552-554, 559-563
	UNC-3.P Interpret probabilities and parameters for a sampling distribution for a difference in proportions.	SE/TE: 547, 548-549, 551-554, 555, 559-563

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Enduring Understanding	Topic/Learning Objective	
(Continued) UNC-3 Probabilistic reasoning allows us to anticipate patterns in data.	5.7 Sampling Distributions for Sample Means	
	UNC-3.Q Determine parameters for a sampling distribution for sample means.	SE/TE: 451-452, 453-457, 464-470
	UNC-3.R Determine whether a sampling distribution of a sample mean can be described as approximately normal.	SE/TE: 451-452, 453-457, 464-470
	UNC-3.S Interpret probabilities and parameters for a sampling distribution for a sample mean.	SE/TE: 456-457, 466 (#21, 28), 469 (#43-47), 470 (#54)
	5.8 Sampling Distributions for Differences in Sample Means	
	UNC-3.T Determine parameters of a sampling distribution for a difference in sample means.	SE/TE: 606-608, 613-616, 617-618
	UNC-3.U Determine whether a sampling distribution of a difference in sample means can be described as approximately normal.	SE/TE: 608-612, 613-616, 617-618
	UNC-3.V Interpret probabilities and parameters for a sampling distribution for a difference in sample means.	SE/TE: 615-616, 617-618
UNIT 6 Inference for Categorical Data: Proportions		
VAR-1 Given that variation may be random or not, conclusions are uncertain.	6-1 Introducing Statistics: Why Be Normal?	
	VAR-1.H Identify questions suggested by variation in the shapes of distributions of samples taken from the same population. [Skill 1.A]	SE/TE: 458-459

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Enduring Understanding	Topic/Learning Objective	
UNC-4 An interval of values should be used to estimate parameters, in order to account for uncertainty.	6.2 Constructing a Confidence Interval for a Population Proportion	
	UNC-4.A Identify an appropriate confidence interval procedure for a population proportion. [Skill 1.D]	SE/TE: 479-481
	UNC-4.B Verify the conditions for calculating confidence intervals for a population proportion. [Skill 4.C]	SE/TE: 472-474, 474-476, 478-479, 481-483
	UNC-4.C Determine the margin of error for a given sample size and an estimate for the sample size that will result in a given margin of error for a population proportion. [Skill 3.D]	SE/TE: 476-477, 478, 489 (#13, 17)
	UNC-4.D Calculate an appropriate confidence interval for a population proportion. [Skill 3.D]	SE/TE: 489-491
	UNC-4.E Calculate an interval estimate based on a confidence interval for a population proportion. [Skill 3.D]	SE/TE: 491 (#30, 31)
UNC-4 An interval of values should be used to estimate parameters, in order to account for uncertainty.	6.3 Justifying a Claim Based on a Confidence Interval for a Population Proportion	
	UNC-4.F Interpret a confidence interval for a population proportion. [Skill 4.B]	SE/TE: 479-480, 489-491
	UNC-4.G Justify a claim based on a confidence interval for a population proportion. [Skill 4.D]	SE/TE: 489 (#15-17), 490-491
	UNC-4.H Identify the relationships between sample size, width of a confidence interval, confidence level, and margin of error for a population proportion. [Skill 4.A]	SE/TE: 481-483, 488-491

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Enduring Understanding	Topic/Learning Objective	
VAR-6 The normal distribution may be used to model variation.	6.4 Setting Up a Test for a Population Proportion	
	VAR-6.D Identify the null and alternative hypotheses for a population proportion. [Skill 1.F]	SE/TE: 494-495, 497-498
	VAR-6.E Identify an appropriate testing method for a population proportion. [Skill 1.E]	SE/TE: 495-497, 498-501
	VAR-6.F Verify the conditions for making statistical inferences when testing a population proportion. [Skill 4.C]	SE/TE: 499-501, 502-503
VAR-6 The normal distribution may be used to model variation.	6.5 Interpreting p -Values	
	VAR-6.G Calculate an appropriate test statistic and p -value for a population proportion. [Skill 3.E]	SE/TE: 500-501, 502-503
DAT-3 Significance testing allows us to make decisions about hypotheses within a particular context.	DAT-3.A Interpret the p -value of a significance test for a population proportion. [Skill 4.B]	SE/TE: 502-503, 504-506, 506-508, 513-515
DAT-3 Significance testing allows us to make decisions about hypotheses within a particular context.	6.6 Concluding a Test for a Population Proportion	
	DAT-3.B Justify a claim about the population based on the results of a significance test for a population proportion. [Skill 4.E]	SE/TE: 506-508, 513-515
UNC-5 Probabilities of Type I and Type II errors influence inference.	6.7 Potential Errors When Performing Tests	
	UNC-5.A Identify Type I and Type II errors. [Skill 1.B]	SE/TE: 527-529, 537
	UNC-5.B Calculate the probability of a Type I and Type II errors. [Skill 3.A]	SE/TE: 539 (#27, 28), 540
	UNC-5.C Identify factors that affect the probability of errors in significance testing. [Skill 4.A]	SE/TE: 530-534, 540
	UNC-5.D Interpret Type I and Type II errors. [Skill 4.B]	SE/TE: 539 (#27, 28), 540

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Enduring Understanding	Topic/Learning Objective	
UNC-4 An interval of values should be used to estimate parameters, in order to account for uncertainty.	6.8 Confidence Intervals for the Difference of Two Proportions	
	UNC-4.I Identify an appropriate confidence interval procedure for a comparison of population proportions. [Skill 1.D]	SE/TE: 546-549, 558
	UNC-4.J Verify the conditions for calculating confidence intervals for a difference between population proportions. [Skill 4.C]	SE/TE: 546-549, 560 (#19, 20), 561-562
	UNC-4.K Calculate an appropriate confidence interval for a comparison of population proportions. [Skill 3.D]	SE/TE: 560 (#19, 20), 561-562
	UNC-4.L Calculate an interval estimate based on a confidence interval for a difference of proportions. [Skill 3.D]	SE/TE: 560-562
UNC-4 An interval of values should be used to estimate parameters, in order to account for uncertainty.	6.9 Justifying a Claim Based on a Confidence Interval for a Difference of Population Proportions	
	UNC-4.M Interpret a confidence interval for a difference of proportions. [Skill 4.B]	SE/TE: 547-549, 560-562
	UNC-4.N Justify a claim based on a confidence interval for a difference of proportions. [Skill 4.D]	SE/TE: 547-549, 560-562
VAR-6 The normal distribution may be used to model variation.	6.10 Setting Up a Test for the Difference of Two Population Proportion	
	VAR-6.H Identify the null and alternative hypotheses for a difference of two population proportions. [Skill 1.F]	SE/TE: 550, 552-554, 555, 561-562
	VAR-6.I Identify an appropriate testing method for the difference of two population proportions. [Skill 1.E]	SE/TE: 558, 561

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Enduring Understanding	Topic/Learning Objective	
(Continued)	VAR-6.J Verify the conditions for making statistical inferences when testing a difference of two population proportions. [Skill 4.C]	SE/TE: 552-554, 555, 561-562
VAR-6 The normal distribution may be used to model variation.	6.11 Carrying Out a Test for the Difference of Two Population Proportions	
	VAR-6.K Calculate an appropriate test statistic for the difference of two population proportions. [Skill 3.E]	SE/TE: 552-554, 561-562
	DAT-3 Significance testing allows us to make decisions about hypotheses within a particular context.	
	DAT-3.C Interpret the p-value of a significance test for a difference of population proportions. [Skill 4.B]	SE/TE: 547-549, 552-555
	DAT-3.D Justify a claim about the population based on the results of a significance test for a difference of population proportions. [Skill 4.E]	SE/TE: 547-549, 552-555
UNIT 7 Inference for Quantitative Data: Means		
VAR-1 Given that variation may be random or not, conclusions are uncertain.	7.1 Introducing Statistics: Why Should I Worry About Error?	
	VAR-1.I Identify questions suggested by probabilities of errors in statistical inference. [Skill 1.A]	SE/TE: 606-607
VAR-7 The t-distribution may be used to model variation.	7.2 Constructing a Confidence Interval for a Population Mean	
	VAR-7.A Describe t-distributions. [Skill 3.C]	SE/TE: 607-608, 613-616, 637-640

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UNC-4 An interval of values should be used to estimate parameters, in order to account for uncertainty.	UNC-4.O Identify an appropriate confidence interval procedure for a population mean, including the mean difference between values in matched pairs. [Skill 1.D]	SE/TE: 604-610, 610-612, 641-643
	UNC-4.P Verify the conditions for calculating confidence intervals for a population mean, including the mean difference between values in matched pairs. [Skill 4.C]	SE/TE: 582-583, 584-585, 636-637, 638-640
	UNC-4.Q Determine the margin of error for a given sample size for a one-sample t-interval. [Skill 3.D]	SE/TE: 588-589, 592-593, 598 (#12), 643-644
	UNC-4.R Calculate an appropriate confidence interval for a population mean, including the mean difference between values in matched pairs. [Skill 3.D]	SE/TE: 579-580, 584-585, 641-643
UNC-4 An interval of values should be used to estimate parameters, in order to account for uncertainty.	7.3 Justifying a Claim About a Population Mean Based on a Confidence Interval	
	UNC-4.S Interpret a confidence interval for a population mean, including the mean difference between values in matched pairs. [Skill 4.B]	SE/TE: 587, 588-590, 641-643
	UNC-4.T Justify a claim based on a confidence interval for a population mean, including the mean difference between values in matched pairs. [Skill 4.D]	SE/TE: 588-590, 642-643
	UNC-4.U Identify the relationships between sample size, width of a confidence interval, confidence level, and margin of error for a population mean. [Skill 4.A]	SE/TE: 591-593, 643-644, 645

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Enduring Understanding	Topic/Learning Objective	
VAR-7 The t-distribution may be used to model variation.	7.4 Setting Up a Test for a Population Mean	
	VAR-7.B Identify an appropriate testing method for a population mean with unknown σ , including the mean difference between values in matched pairs. [Skill 1.E]	SE/TE: 575-580, 636-637
	VAR-7.C Identify the null and alternative hypotheses for a population mean with unknown σ , including the mean difference between values in matched pairs. [Skill 1.F]	SE/TE: 579-580, 638-639, 639-640
	VAR-7.D Verify the conditions for the test for a population mean, including the mean difference between values in matched pairs. [Skill 4.C]	SE/TE: 582-583, 584-585, 588-590, 636-637, 638-639, 651 (#23)
VAR-7 The t-distribution may be used to model variation.	7.5 Carrying Out a Test for a Population Mean	
	VAR-7.E Calculate an appropriate test statistic for a population mean, including the mean difference between values in matched pairs. [Skill 3.E]	SE/TE: 587-590, 637, 638-640, 648-649
DAT-3 Significance testing allows us to make decisions about hypotheses within a particular context.	DAT-3.E Interpret the p-value of a significance test for a population mean, including the mean difference between values in matched pairs. [Skill 4.B]	SE/TE: 587-590, 638-639, 639-640
	DAT-3.F Justify a claim about the population based on the results of a significance test for a population mean. [Skill 4.E]	SE/TE: 587-590, 600 (#27-30), 601 (#35, 36)

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Enduring Understanding	Topic/Learning Objective	
UNC-4 An interval of values should be used to estimate parameters, in order to account for uncertainty.	7.6 Confidence Intervals for the Difference of Two Means	
	UNC-4.V Identify an appropriate confidence interval procedure for a difference of two population means. [Skill 1.D]	SE/TE: 607-608, 609-610, 610-612, 614-616, 617-618
	UNC-4.W Verify the conditions to calculate confidence intervals for the difference of two population means. [Skill 4.C]	SE/TE: 608-609, 610-612, 614-616, 617-618
	UNC-4.X Determine the margin of error for the difference of two population means. [Skill 3.D]	SE/TE 607, 610, 612, 624 (#7, 8)
	UNC-4.Y Calculate an appropriate confidence interval for a difference of two population means. [Skill 3.D]	SE/TE 610, 610-612, 625-631
UNC-4 An interval of values should be used to estimate parameters, in order to account for uncertainty.	7.7 Justifying a Claim About the Difference of Two Means Based on a Confidence Interval	
	UNC-4.Z Interpret a confidence interval for a difference of population means. [Skill 4.B]	SE/TE: 610, 610-612, 624 (#8), 625 (#15), 627 (#22, 23)
	UNC-4.AA Justify a claim based on a confidence interval for a difference of population means. [Skill 4.D]	SE/TE: 624 (#5, 6), 625 (#15)
	UNC-4.AB Identify the effects of sample size on the width of a confidence interval for the difference of two means. [Skill 4.A]	SE/TE: 643-644

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Enduring Understanding	Topic/Learning Objective	
VAR-7 The t-distribution may be used to model variation.	7.8 Setting Up a Test for the Difference of Two Population Means	
	VAR-7.F Identify an appropriate selection of a testing method for a difference of two population means. [Skill 1.E]	SE/TE: 613-618
	VAR-7.G Identify the null and alternative hypotheses for a difference of two population means. [Skill 1.F]	SE/TE: 615-616, 625 (#9), 626 (#20), 629 (#33, 37), 630 (#38), 631 (#47)
	VAR-7.H Verify the conditions for the significance test for the difference of two population means. [Skill 4.C]	SE/TE: 615-616, 617-618, 626 (#20), 628 (#33)
VAR-7 The t-distribution may be used to model variation.	7.9 Carrying Out a Test for the Difference of Two Population Means	
	VAR-7.I Calculate an appropriate test statistic for a difference of two means. [Skill 3.E]	SE/TE: 613-618, 618-619, 620-621, 624-632
	DAT-3 Significance testing allows us to make decisions about hypotheses within a particular context.	
	DAT-3.G Interpret the p-value of a significance test for a difference of population means. [Skill 4.B]	SE/TE: 615-616, 617-618, 625 (#9), 628 (#27)
	DAT-3.H Justify a claim about the population based on the results of a significance test for a difference of two population means in context. [Skill 4.E]	SE/TE: 625-632

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Enduring Understanding	Topic/Learning Objective	
(Continued) VAR-7 The t-distribution may be used to model variation.	7.10 Skills Focus: Selecting, Implementing, and Communicating Inference Procedures (This topic is intended to focus on the skill of selecting an appropriate inference procedure, now that students have a range of options. Students should be given opportunities to practice when and how to apply all learning objectives relating to inference involving proportions or means.)	Opportunities to address this standard can be found on the following pages: SE/TE: 488-491, 513-516, 537-542, 559-563, 597-604, 624-632, 648-659
UNIT 8 Inference for Categorical Data: Chi-Square		
VAR-1 Given that variation may be random or not, conclusions are uncertain.	8.1 Introducing Statistics: Are My Results Unexpected?	
	VAR-1.J Identify questions suggested by variation between observed and expected counts in categorical data. [Skill 1.A]	SE/TE: 669-671
VAR-8 The chi-square distribution may be used to model variation.	8.2 Setting Up a Chi-Square Goodness of Fit Test	
	VAR-8.A Describe chi-square distributions. [Skill 3.C]	SE/TE: 669-670, 672
	VAR-8.B Identify the null and alternative hypotheses in a test for a distribution of proportions in a set of categorical data. [Skill 1.F]	SE/TE: 672-673, 673-675, 677-678, 693-694, 695 (#23 0, 696 (#24)
	VAR-8.C Identify an appropriate testing method for a distribution of proportions in a set of categorical data. [Skill 1.E]	SE/TE: 673-675, 675-676
	VAR-8.D Calculate expected counts for the chi-square test for goodness of fit. [Skill 3.A]	SE/TE: 670, 673-675, 677, 693-694
	VAR-8.E Verify the conditions for making statistical inferences when testing goodness of fit for a chi-square distribution. [Skill 4.C]	SE/TE: 671-672, 673-675, 694, 698 (#28)

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Enduring Understanding	Topic/Learning Objective	
VAR-8 The chi-square distribution may be used to model variation.	8.3 Carrying Out a Chi-Square Test for Goodness of Fit	
	VAR-8.F Calculate the appropriate statistic for the chi-square test for goodness of fit. [Skill 3.E]	SE/TE: 673-675, 677, 693 (#1-6), 694-700
	VAR-8.G Determine the p-value for chi-square test for goodness of fit significance test. [Skill 3.E]	SE/TE: 673-675, 693 (#1-6), 694, 695 (#23), 696 (#24), 676 (#36, 37)
DAT-3 Significance testing allows us to make decisions about hypotheses within a particular context.	DAT-3.I Interpret the p-value for the chi-square test for goodness of fit. [Skill 4.B]	SE/TE: 673-675, 693 (#1-6), 694, 695 (#23), 697 (#36, 37)
	DAT-3.J Justify a claim about the population based on the results of a chi-square test for goodness of fit. [Skill 4.E]	SE/TE: 673-675, 693-700
VAR-8 The chi-square distribution may be used to model variation.	8.4 Expected Counts in Two-Way Tables	
	VAR-8.H Calculate expected counts for two-way tables of categorical data. [Skill 3.A]	SE/TE: 677-678, 679-681, 696
VAR-8 The chi-square distribution may be used to model variation.	8.5 Setting Up a Chi-Square Test for Homogeneity or Independence	
	VAR-8.I Identify the null and alternative hypotheses for a chi-square test for homogeneity or independence. [Skill 1.F]	SE/TE: 677-681, 682-683, 683-686
	VAR-8.J Identify an appropriate testing method for comparing distributions in two-way tables of categorical data. [Skill 1.E]	SE/TE: 678, 680-683, 686-684, 685-687, 687-689
	VAR-8.K Verify the conditions for making statistical inferences when testing a chi-square distribution for independence or homogeneity. [Skill 4.C]	SE/TE: 678, 680-681, 684, 685

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Enduring Understanding	Topic/Learning Objective	
VAR-8 The chi-square distribution may be used to model variation.	8.6 Carrying Out a Chi-Square Test for Homogeneity or Independence	
	VAR-8.L Calculate the appropriate statistic for a chi-square test for homogeneity or independence. [Skill 3.E]	SE/TE: 680-681, 685-687, 690, 696-700
DAT-3 Significance testing allows us to make decisions about hypotheses within a particular context.	DAT-3.K Interpret the p-value for the chi-square test for homogeneity or independence. [Skill 4.B]	SE/TE: 680-681, 685-687, 696-700
	DAT-3.L Justify a claim about the population based on the results of a chi-square test for homogeneity or independence. [Skill 4.E]	SE/TE: 680-681, 685-687, 696-700
	8.7 Skills Focus: Selecting an Appropriate Inference Procedure for Categorical Data (This topic is intended to focus on the skill of selecting an appropriate inference procedure now that students have a range of options. Students should be given opportunities to practice when and how to apply all learning objectives relating to inference for categorical data.)	SE/TE: 693-700

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Enduring Understanding	Topic/Learning Objective	
UNIT 9 Inference for Quantitative Data: Slopes		
VAR-1 Given that variation may be random or not, conclusions are uncertain.	9.1 Introducing Statistics: Do Those Points Align?	
	VAR-1.K Identify questions suggested by variation in scatter plots. [Skill 1.A]	SE/TE: 702-703
UNC-4 An interval of values should be used to estimate parameters, in order to account for uncertainty.	9.2 Confidence Intervals for the Slope of a Regression Model	
	UNC-4.AC Identify an appropriate confidence interval procedure for a slope of a regression model. [Skill 1.D]	SE/TE: 712
	UNC-4.AD Verify the conditions to calculate confidence intervals for the slope of a regression model. [Skill 4.C]	SE/TE: 704-706, 706-707, 708-709, 723
	UNC-4.AE Determine the given margin of error for the slope of a regression model. [Skill 3.D]	SE/TE: 711-712
	UNC-4.AF Calculate an appropriate confidence interval for the slope of a regression model. [Skill 3.D]	SE/TE: 714-716, 724-733
UNC-4 An interval of values should be used to estimate parameters, in order to account for uncertainty.	9.3 Justifying a Claim About the Slope of a Regression Model Based on a Confidence Interval	
	UNC-4.AG Interpret a confidence interval for the slope of a regression model. [Skill 4.B]	SE/TE: 714-716, 724-733
	UNC-4.AH Justify a claim based on a confidence interval for the slope of a regression model. [Skill 4.D]	SE/TE: 714-716, 724-733
	UNC-4.AI Identify the effects of sample size on the width of a confidence interval for the slope of a regression model. [Skill 4.A]	SE/TE: 718-720

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Enduring Understanding	Topic/Learning Objective	
VAR-7 The t-distribution may be used to model variation.	9.4 Setting Up a Test for the Slope of a Regression Model	
	VAR-7.J Identify the appropriate selection of a testing method for a slope of a regression model. [Skill 1.E]	SE/TE: 703-704, 709-711, 712
	VAR-7.K Identify appropriate null and alternative hypotheses for a slope of a regression model. [Skill 1.F]	SE/TE: 712, 714-716, 724-733
	VAR-7.L Verify the conditions for the significance test for the slope of a regression model. [Skill 4.C]	SE/TE: 714-716, 724-733
VAR-7 The t-distribution may be used to model variation.	9.5 Carrying Out a Test for the Slope of a Regression Model	
	VAR-7.M Calculate an appropriate test statistic for the slope of a regression model. [Skill 3.E]	SE/TE: 714-716, 724-733
DAT-3 Significance testing allows us to make decisions about hypotheses within a particular context.	DAT-3.M Interpret the p-value of a significance test for the slope of a regression model. [Skill 4.B]	SE/TE: 714-716, 724-733
	DAT-3.N Justify a claim about the population based on the results of a significance test for the slope of a regression model. [Skill 4.E]	SE/TE: 714-716, 724-733
	9.6 Skills Focus: Selecting an Appropriate Inference Procedure (This topic is intended to focus on the skill of selecting an appropriate inference procedure now that students have a range of options. Students should be given opportunities to practice when and how to apply all learning objectives relating to inference.)	SE/TE: 724-733