



**Correlation of**

***Understanding Basic Statistics, 9/E, by  
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Brase, ©2024, ISBN: 9780357757482***

**to**

**Oklahoma Academic Standards for Statistics &  
Probability (S) (2022)**

**A Correlation of *Understanding Basic Statistics* to  
the OAS-M for Statistics & Probability (S) (2022)**

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<b>OAS-M for Statistics &amp; Probability (S) (2022)</b>	<b><i>Understanding Basic Statistics</i></b>
<b>Statistical Questions (Q)</b>	
<b>S.Q.1 Understand the distinction between mathematical models and statistical models.</b>	
S.Q.1.1 Distinguish among different sources of variability, including measurement, natural, induced, and sampling variability.	<b>pages 105-106 (Guided Exercise 4)</b>
S.Q.1.2 Formulate meaningful statistical questions to clarify the problem at hand.	<b>pages 18-19</b>
<b>S.Q.2 Distinguish between the distribution of a population, a distribution of sample data, and a sampling distribution.</b>	
S.Q.2.1 Distinguish between sample statistics and population parameters.	<b>page 6 (Guided Exercise 1)</b> pages 5-6 page 11
S.Q.2.2 Recognize a population distribution has fixed values of its parameters and that these parameter values are typically unknown.	<b>page 9</b> <b>pages 12-15</b> page 11 pages 18-19
S.Q.2.3 Recognize that a sample data distribution is taken from a population distribution, and the data distribution is what is seen in practice.	<b>pages 12-15</b> page 9 page 18
S.Q.2.4 Recognize a sampling distribution is the distribution of a sample statistic (e.g., sample mean, sample proportion) obtained from repeated samples.	<b>pages 406-410</b> <b>pages 411-412 (Guided Exercise 4)</b> <b>pages 413-416</b> pages 308-319 pages 319-328
<b>S.Q.3 Identify differences between categorical and quantitative data.</b>	
S.Q.3.1 Determine whether categorical or quantitative data is appropriate to answer a statistical question.	<b>pages 5-6</b> <b>page 6 (Guided Exercise 1)</b> page 11
S.Q.3.2 Compare and contrast different potential graphical or visual representations given the same data set.	<b>pages 58-59 (Guided Exercise 2)</b> page 58 page 62 (Procedure) pages 63-65 (Section 2.2 Problems)

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<b>Data Collection (DC)</b>	
<b>S.DC.1 Distinguish among different types of study designs for collecting data, and know the scope of inference for each design type.</b>	
S.DC.1.1 Distinguish among sample surveys, experiments, and observational studies.	<b>pages 20-25</b> <b>page 26</b>
S.DC.1.2 Compare and contrast the benefits of different sampling techniques.	<b>pages 16-18</b> <b>pages 23-24 (Guided Exercise 5)</b> <b>page 26</b>
S.DC.1.3 Determine the appropriate scope of inference for generalizing results.	<b>page 25</b>
S.DC.1.4 Explain how sample size impacts the precision with which generalizations can be made.	<b>page 303</b> <b>pages 304-306 (Critical Thinking)</b> <b>page 345 (Critical Thinking)</b>
S.DC.1.5 Determine when a cause-and-effect inference can be drawn from an association, based on how the data were collected.	<b>page 25 (Guided Exercise 6)</b>
<b>S.DC.2 Identify common sources of bias and the role of randomization in study design.</b>	
S.DC.2.1 Explain how randomization and sources of bias impact the results of a study.	<b>pages 18-19</b> <b>pages 22-23</b>
S.DC.2.2 Understand the different roles of random selection and random assignment in study design.	<b>pages 18-19</b> pages 12-15
<b>Data Analysis (DA)</b>	
<b>S.DA.1 Use distributions of quantitative and categorical data to identify the key features of the data collected in context.</b>	
S.DA.1.1 Summarize and represent the distribution for univariate quantitative data by describing and analyzing the shape of the distribution, the measures of center for the distribution, the patterns in variability for the distribution, and any outliers, gaps, or other unusual features in the distribution.	<b>pages 44-45 (Guided Exercise 1)</b> <b>pages 71-74 (Section 2.3 Problems)</b> pages 46-48 pages 51-53 page 70 (Critical Thinking) page 93 (Viewpoint) pages 94-96 (Section 3.1 Problems) page 100 (Guided Exercise 3) pages 102-103 (Example 7) pages 105-106 (Guided Exercise 4) pages 107-108 (Guided Exercise 5) pages 108-112 (Section 3.2 Problems) pages 268-272

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S.DA.1.2 Select and create an appropriate display (e.g., dot plots, histograms, box plots) for univariate data.	<b>pages 44-45 (Guided Exercise 1)</b> <b>pages 58-59 (Guided Exercise 2)</b> page 43 (Example 2) page 56 pages 59-60 (Guided Exercise 3) pages 60-61 page 62 (Procedure) pages 67-68 pages 68-69 (Guided Exercise 4) pages 71-74 (Section 2.3 Problems) pages 80-82 (Using Technology) page 117 (Guided Exercise 8) pages 119-121 (Section 3.3 Problems) pages 294-295 (Example 8)
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S.DA.1.4 Describe and analyze the distribution of univariate categorical data.	<b>pages 58-59 (Guided Exercise 2)</b> <b>pages 59-60 (Guided Exercise 3)</b>
<b>S.DA.2 Use the mean and standard deviation of a data set to fit it to a normal distribution and to estimate population percentages.</b>	
S.DA.2.1 Use calculators, computers, or tables to estimate areas under the normal curve. Recognize that there are data sets for which such a procedure is not appropriate.	<b>page 288 (Tech Notes)</b> <b>page 283 (Tech Notes)</b> pages 355-377 (Using Technology)
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S.DA.4.1 Create two-way tables for bivariate categorical data and analyze for possible associations between the two categories using marginal, joint, and conditional frequencies.	<b>page 195</b>
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<b>S.P.2 Determine probabilities, including joint probabilities, conditional probabilities, probabilities of independent events, and probabilities of dependent events. Interpret the results.</b>	
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