Lesson 4: Describing Quantitative Data: Center, & Spread

Preparation

Solutions

Please note that the steps show rounded numbers, but that the final answers to the problems are calculated without rounding.

Problem	Part	Solution
1	Shape	c. Symmetric, bell-shaped, skewed right, and skewed left, uniform, unimodal, bimodal, or multimodal
1	Center	a. Average, mean, median, mode
1	Spread	b. Standard deviation, variance
2	-	The standard deviation is a measure of the spread in a distribution. If the standard deviation is small then the data tend to be closer together. If the standard deviation is large, the data is usually more spread out.
3	-	Answers will vary
4	-	Sample variance is also a measure of spread in a data set. The sample variance is an estimator of the true population variance. The sample variance is just the sample standard deviation squared or s^2.
5	Percentiles	A percentile is a number such that a specified percentage of the data are at or below this number, such as at the 50th percentile, this value is as large or larger than 50% of all the data.
5	Quartiles	Quartiles are just three special percentiles, 25^{th}, 50^{th}, and 75^{th} percentiles divide the data into fourths.
5	Five-number summary	The five number summary is comprised of the minimum, first quartile, median, third quartile, and maximum. It is just a good way to summarize the data into just five numbers.
5	Boxplot	A boxplot is a graphical representation of the five-number summary.
6	-	Answers may vary, students should choose a company and justify why. They will probably choose B or C, because they have the highest means.
7	-	0.377