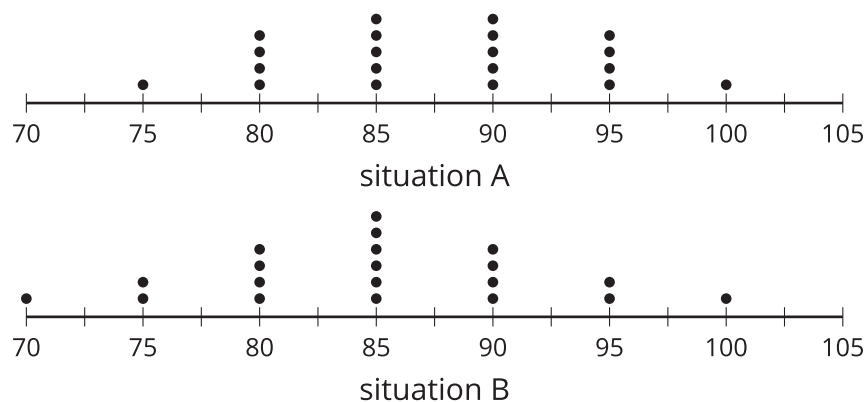


Lesson 15 Practice Problems

1. Twenty students participated in a psychology experiment which measured their heart rates in two different situations.



- a. What are the appropriate measures of center and variability to use with the data? Explain your reasoning.

 - b. Which situation shows a greater typical heart rate?
 - c. Which situation shows greater variability?
- 2.
- a. Invent two situations that you think would result in distributions with similar measures of variability. Explain your reasoning.

 - b. Invent two situations that you think would result in distributions with different measures of variability. Explain your reasoning.

3. The data set and some summary statistics are listed.

11.5, 12.3, 13.5, 15.6, 16.7, 17.2, 18.4, 19, 19.5, 21.5

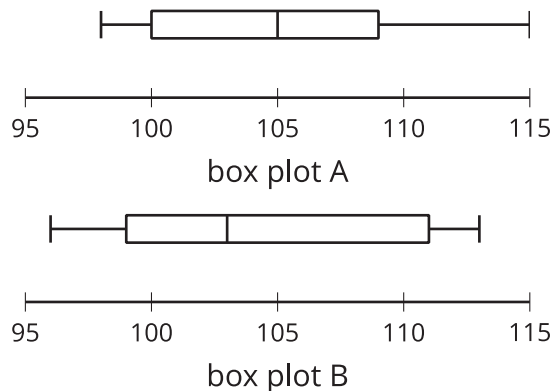
- mean: 16.52
- median: 16.95
- standard deviation: 3.11
- IQR: 5.5

a. How does adding 5 to each of the values in the data set impact the shape of the distribution?

b. How does adding 5 to each of the values in the data set impact the measures of center?

c. How does adding 5 to each of the values in the data set impact the measures of variability?

4. Here are two box plots:



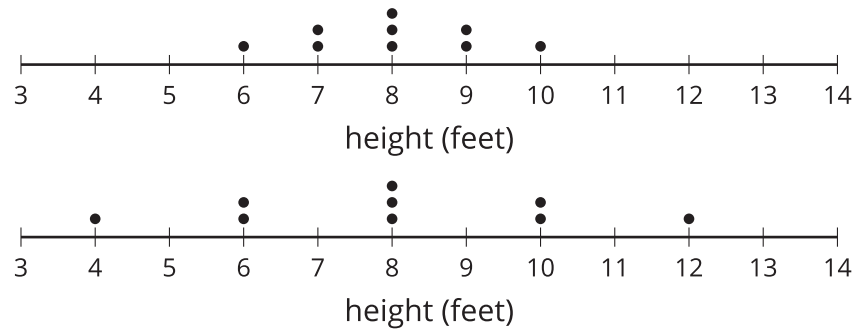
- a. Which box plot has a greater median?
- b. Which box plot has a greater measure of variability?

5. The depth of two lakes is measured at multiple spots. For the first lake, the mean depth is about 45 feet with a standard deviation of 8 feet. For the second lake, the mean depth is about 60 feet with a standard deviation of 27 feet.

Noah says the second lake is generally deeper than the first lake. Do you agree with Noah?

(From Unit 1, Lesson 13.)

6. The dot plots display the height, rounded to the nearest foot, of maple trees from two different tree farms.

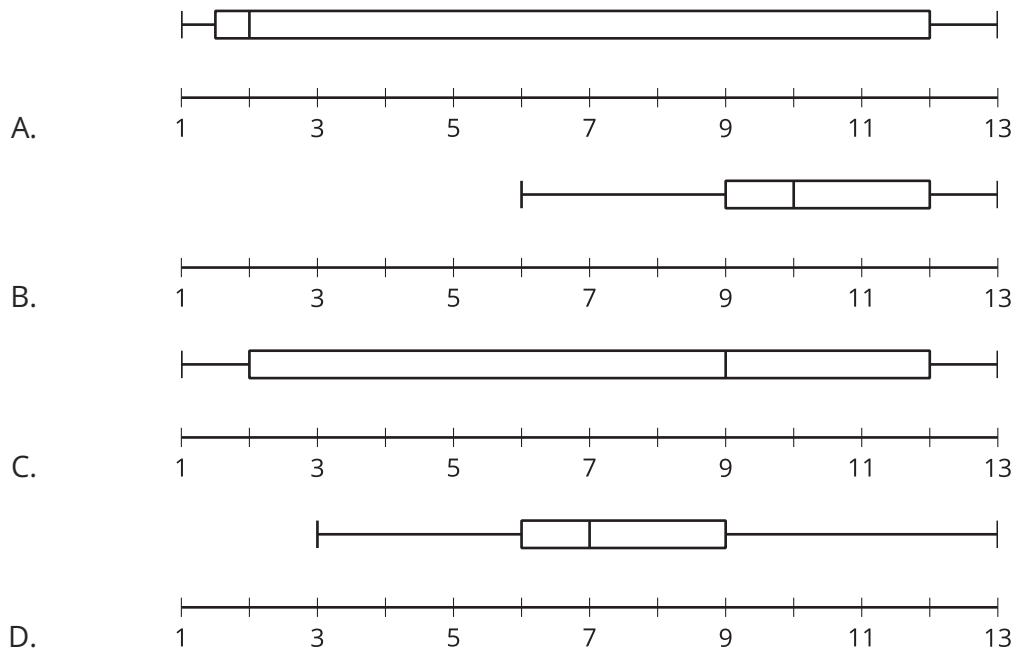


a. Compare the mean and standard deviation of the two data sets.

b. What does the standard deviation tell you about the trees at these farms?

(From Unit 1, Lesson 12.)

7. Which box plot has an IQR of 10?



(From Unit 1, Lesson 11.)

8. What effect does eliminating the lowest value, -6, from the data set have on the mean and median?

-6, 3, 3, 3, 3, 5, 6, 6, 8, 10

(From Unit 1, Lesson 9.)