

Lesson 10 Practice Problems

Problem 1

Statement

Select **all** the distribution shapes for which it is most often appropriate to use the mean.

- A. bell-shaped
- B. bimodal
- C. skewed
- D. symmetric
- E. uniform

Solution

["A", "D", "E"]

Problem 2

Statement

For which distribution shape is it usually appropriate to use the median when summarizing the data?

- A. bell-shaped
- B. skewed
- C. symmetric
- D. uniform

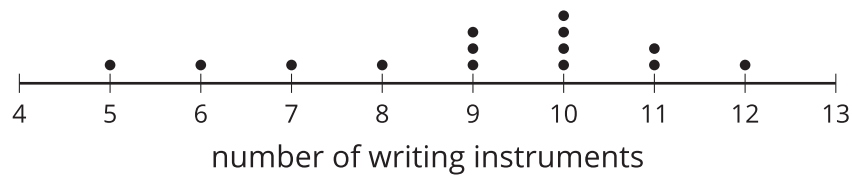
Solution

B

Problem 3

Statement

The number of writing instruments in some teachers' desks is displayed in the dot plot. Which is greater, the mean or the median? Explain your reasoning using the shape of the distribution.



Solution

The median is greater than the mean. Sample reasoning: Since the distribution is skewed left, the mean will be less than the median.

Problem 4

Statement

A student has these scores on their assignments. The teacher is considering dropping a lowest score. What effect does eliminating the lowest value, 0, from the data set have on the mean and median?

0, 40, 60, 70, 75, 80, 85, 95, 95, 100

Solution

The mean increases from 70 to approximately 77.78. The median increases from 77.5 to 80.

(From Unit 1, Lesson 9.)

Problem 5

Statement

- What is the five-number summary for the data 2, 2, 4, 4, 5, 5, 6, 7, 9, 15?
- When the maximum, 15, is removed from the data set, what is the five-number summary?

Solution

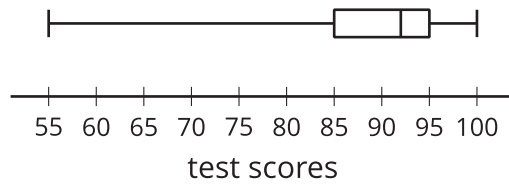
- 2, 4, 5, 7, 15 (Minimum, Q1, Median, Q3, Maximum)
- 2, 3, 5, 6.5, 9 (Minimum, Q1, Median, Q3, Maximum)

(From Unit 1, Lesson 9.)

Problem 6

Statement

The box plot summarizes the test scores for 100 students:



Which term best describes the shape of the distribution?

- A. bell-shaped
- B. uniform
- C. skewed
- D. symmetric

Solution

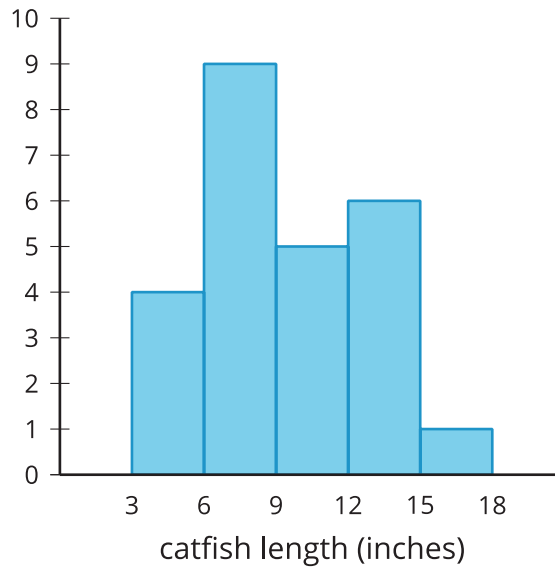
C

(From Unit 1, Lesson 4.)

Problem 7

Statement

The histogram represents the distribution of lengths, in inches, of 25 catfish caught in a lake.



- a. If possible, find the mean. If not possible, explain why not.
- b. If possible, find the median. If not possible, explain why not.
- c. Were any of the fish caught 12 inches long?
- d. Were any of the fish caught 19 inches long?

Solution

- a. Sample response: It is not possible to find the mean, because the exact values are not shown in a histogram.
- b. Sample response: It is not possible to find the median, but you do know what interval the middle number is in. It is in the 6 to 9 inch interval, because the median is the thirteenth value in the data set.
- c. Sample response: There is no way to tell whether a fish caught was 12 inches long using the histogram. You do know some fish were in the 12 to 15 inch interval, so it is possible.
- d. No

(From Unit 1, Lesson 2.)