

MODULE 9 One-Variable Data Distributions

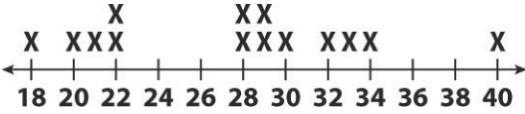
LESSON 9-1

Practice and Problem Solving: A/B

- Mean: 24.5; median: 25; range: 12
- Mean: 8.6; median: 9; range: 8
- Mean: 84; median: 85.5; range: 21
- Mean: 1.3; median: 1.2; range: 2.0
- Mean: 40; median: 39; range: 14; interquartile range: 7
- Mean: 43; median: 43.5; range: 43; interquartile range: 36
- Club A: 4.5; Club B: 16.8
- Possible answer: Club A has a slightly lower average age in its club. Both its mean and median ages are lower than those of Club B. The ages are much more spread out in Club B. Its range, interquartile range, and standard deviation are each three times as great or more as the corresponding statistics for Club A.
- Possible answer: Club A has the lower mean and median age, and so it could claim to be the “younger” club. Club B has three of its eight members in their 20s, while Club A has no member below age 34. So, Club B could also make the same claim.

LESSON 9-2

Practice and Problem Solving: A/B

- 100 is not an outlier because $Q3 = 85$ and $IQR = 16$.
Then $100 < Q3 + 1.5(IQR)$.
- 100 is an outlier because $Q3 = 85$ and $IQR = 9$.
Then $100 > Q3 + 1.5(IQR)$
- mean = 27.57; median = 28.5
- range = 22; interquartile range = 10
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A dot plot on a number line from 18 to 40 with tick marks every 2 units. The data points are: 18 (1 dot), 20 (3 dots), 22 (1 dot), 28 (2 dots), 30 (3 dots), 32 (3 dots), and 40 (1 dot).
- Possible answer: The dot plot makes it appear as if 40 is an outlier. However, since $Q3 = 32$ and $IQR = 10$, 40 is not an outlier since $40 < 32 + 1.5(10)$
- Possible answer: The dot plot does not help predict. It makes it appear that there are two “zones” where this player tends to hit home runs: from 18 to 22 and from 28 to 34. The table may help predict. By showing the data over time, it makes clear that the player’s home run totals have fallen back during the past two seasons to the 18–22 zone.
- The mean would decrease to 26.4 and the median would decrease to 28. The range would increase to 30 and the interquartile range would increase to 11.

LESSON 9-3

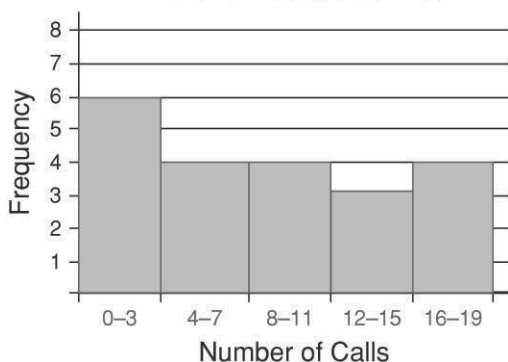
Practice and Problem Solving: A/B

1.

Frequency
6
4
4
3
4

2.

Fire and Rescue Service



3. 4-7, 8-11, 16-19

4. Estimate of mean:

$$\frac{1.5(6) + 5.5(4) + 9.5(4) + 13.5(3) + 17.5(4)}{21}$$

$$\approx 8.55. \text{ The actual mean is } \frac{179}{21} \approx 8.52.$$

The estimate is very close to the actual answer.

5. 38 °F

6. 20 °F

7. 50 °F is not an outlier. Q3 = 46 and IQR = 12. So, $50 < Q3 + 1.5(IQR)$.

LESSON 9-4

Practice and Problem Solving: A/B

1. 68.%

2. 99.7%

3. 47.5%

4. 34%

5. 50%

6. 47.5%

7. 81.5%

8. 2.5%

9. 97.5%

10. 84%

11. 0.15%