

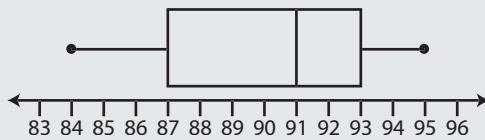
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Box-and-Whisker Plots

4.A.1.b 4.B.1.b

Example

The box-and-whisker plot displays the scores that Carolyn scored on her math quizzes.



What is the interquartile range of the data?

- (A) 2 (C) 6
 (B) 4 (D) 11

Thinking It Through

Skim Make sure you read the box-and-whisker plot before trying to answer the question.

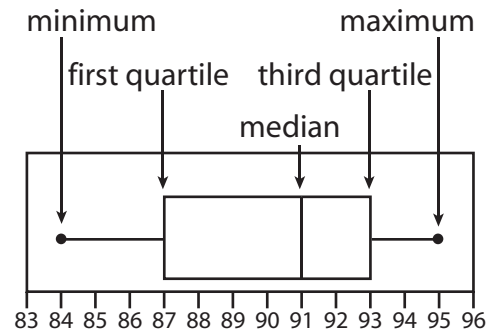
All of the information you need is in the box-and-whisker plot. The interquartile range is the difference between the upper and lower quartiles.

The upper quartile is 93. The lower quartile is 87.

To find the interquartile range, subtract $93 - 87 = 6$, choice C.

Review

- A box-and-whisker plot gives you the following data: the minimum value, **first quartile**, **median**, **third quartile**, and maximum value in order from left to right.
- The median, or second quartile, is the measure of the middle number or numbers of a data set when the data is ordered from least to greatest. In the data set, 5, 7, 9, 10, 12, the median is 9.
- The first quartile, or lower quartile, is the median of the values from the minimum value to the median. In the data set 5, 7, 9, 10, 12, the lower quartile is 7.
- The third quartile, or upper quartile, is the median of the values from the median to the maximum value. In the data set 5, 7, 9, 10, 12, the upper quartile is 10.
- The **interquartile range** is the difference between the third (upper) quartile and the first (lower) quartile.



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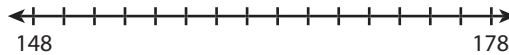
Directions: Write or draw the answer to each Part in the space or on the lines provided.

- 1** The scores from the last eight games that Jamal bowled are shown below.

164, 157, 175, 149, 172, 155, 170, 168

Part A

Use the data and the number line to create a box-and-whisker plot.



Part B

- Use what you know about making box-and-whisker plots to explain why your answer is correct. Use words, numbers, and/or symbols in your explanation.
- What is the interquartile range of the data? Use what you know about box-and-whisker plots to explain why your answer is correct. Use words, numbers, and/or symbols in your explanation.



With an even number of data, the median is the mean of the two middle numbers.