

10-2 Measures of Variation (Pages 490–494)

The **range** of a set of numbers is the difference between the least and greatest number in the set. In a large set of data, it is helpful to separate the data into four equal parts called **quartiles**. The *median* of a set of data separates the data in half. The median of the lower half of a set of data is the **lower quartile (LQ)**. The median of the upper half of the data is called the **upper quartile (UQ)**.

Finding the Interquartile Range	The interquartile range is the range of the middle half of a set of numbers. Interquartile range = UQ – LQ
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EXAMPLE

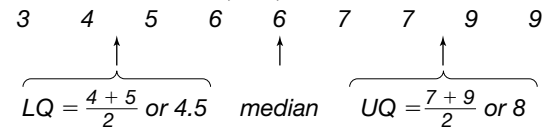
Find the range, median, UQ, LQ, and interquartile range:

5, 7, 3, 9, 6, 9, 4, 6, 7

First list the data in order from least to greatest: 3, 4, 5, 6, 6, 7, 7, 9, 9.

The range is $9 - 3$ or 6.

Next find the median, UQ, and LQ.



The interquartile range is $8 - 4.5$ or 3.5.

Try These Together

Find the range, median, upper and lower quartiles, and the interquartile range for each set of data.

1. 20, 90, 80, 70, 50, 40, 90

2. 67i, 52i, 60i, 58i, 62i

HINT: First arrange the data in order from least to greatest.

PRACTICE

Find the range, median, upper and lower quartiles, and the interquartile range for each set of data.

3. 30, 54, 42, 45, 61, 44, 62, 57, 59, 53

4. 101, 128, 124, 129, 120, 108, 102, 118, 127, 123, 116

5. 78, 84, 100, 69, 70, 75, 87, 85, 97, 89

6. **Measurement** The following list gives the heights in inches of a group of people. Find the range and the interquartile range for the data.

48, 55, 50, 52, 49, 55, 60, 61, 62, 56, 53



7. **Standardized Test Practice** What is the lower quartile of the set of data? 9, 10, 7, 4, 20, 17, 12, 8, 5, 16, 21, 0, 8, 13

A 8

B 7

C 6

D 5

Answers: 1. 70; 70; 90; 40; 50 2. 15; 60; 64.5; 55; 9.5 3. 32; 53.5; 59; 44; 15 4. 28; 120; 127; 108; 19 5. 31; 84.5; 89; 75; 14 6. 14; 10 7. B
