

## Looking Ahead

In the following example, we will look at a statistical measure known as the range, which is calculated as the difference between the largest and smallest values in the data set.

### Example Preview

Calculate the range for the following data.

6, 12, 10, 11, 14, 12, 7, 12, 14, 17

### Solution

To find the largest and smallest data value, we will order the values from the smallest to the largest.

6, 7, 10, 11, 12, 12, 12, 14, 14, 17

The largest value is 17 and the smallest value is 6, so the range of this data set is

Range = Largest – Smallest

$$= 17 - 6$$

$$= 11$$

You will apply subtraction of real numbers to find the range.

## 3.R.2 Exercises

**True/False.** Determine whether each statement is true or false. If a statement is false, explain how it can be changed so the statement will be true. (**Note:** There may be more than one acceptable change.)

1. The sum of a number and its additive inverse is the number itself.
2. The additive inverse of negative seven is seven.
3. We can think of addition of numbers as accumulating numbers.
4. The expression “ $15 - 7$ ” can be thought of as “fifteen plus negative seven.”

## Practice

Find the additive inverse (opposite) of each real number.

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5. 11

6.  $-3.4$

Subtract. Reduce fractions to lowest terms.

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7.  $-8 - (-11)$

8.  $\frac{7}{15} - \frac{2}{15}$

Perform the indicated operation to find the net change in value.

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9.  $-6 + (-4) - 5$

10.  $-11.3 + 5.3 - 7.9$

## Applications

Solve.

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11. **Temperature:** At 2 p.m. the temperature was  $76^{\circ}\text{F}$ . At 8 p.m. the temperature was  $58^{\circ}\text{F}$ . What was the change in temperature?
12. **Real Estate:** A couple sold their house for  $\$135,000$ . They paid the realtor  $\$8100$ , and other expenses of the sale came to  $\$800$ . If they owed the bank  $\$87,000$  for the mortgage, what were their net proceeds from the sale?

13. **Construct a Data Set:** Construct a data set with 5 values that has a range of zero.
14. **Construct a Data Set:** Construct a data set with 7 values that has a range of zero and a mean of 2.5.

### Writing & Thinking

15. Explain, in your own words, how to find the difference between a positive and a negative number.
16. What is the additive inverse of 0? Why?