

# 2.3

## Subtract Real Numbers

**Goal** • Subtract real numbers.

### Your Notes

#### SUBTRACTION RULE

Words: To subtract  $b$  from  $a$ , add the opposite of  $b$  to  $a$ .

Algebra:  $a - b = \underline{a} + \underline{(-b)}$

Numbers:  $15 - 7 = \underline{15} + \underline{(-7)}$

#### Example 1 Subtract real numbers

Find the difference.

a.  $-10 - 4 = -10 + \underline{(-4)} = \underline{-14}$

b.  $13 - (-11) = 13 + \underline{11} = \underline{24}$

#### Example 2 Evaluate a variable expression

Evaluate the expression  $a - b + 5.3$  when  $a = 6.5$  and  $b = -3$ .

#### Solution

$$\begin{aligned} a - b + 5.3 &= \underline{6.5} - \underline{(-3)} + 5.3 && \text{Substitute values.} \\ &= \underline{6.5} + \underline{3} + 5.3 && \text{Add the opposite} \\ & && \text{of } \underline{-3}. \\ &= \underline{14.8} && \text{Add.} \end{aligned}$$

✓ **Checkpoint** Find the difference.

1.  $-4 - 8$

$\underline{-12}$

2.  $9 - 18$

$\underline{-9}$

## Your Notes

- ✓ **Checkpoint** Evaluate the expression when  $m = 3.2$  and  $t = -4$ .

3. $m - t + 2$ $9.2$	4. $(m - 3) - t$ $4.2$
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### Example 3 Evaluate change

**Hiking Trail** A sign at the start of a hiking trail states you are 320 feet below sea level. At the end of the trail another sign states you are 880 feet above sea level. Find the change in elevation of the trail.

#### Solution

**Step 1 Write** a verbal model of the situation.

Change in elevation =  $\frac{\text{Elevation at end of trail} - \text{Elevation at start of trail}}$

**Step 2 Find** the change in elevation.

Change in elevation =  $\frac{880 - (-320)}{\text{Substitute values.}}$   
 $= \frac{880 + 320}{\text{Add the opposite of } -320.}$   
 $= \frac{1200}{\text{Add } 880 \text{ and } 320.}$

The change in elevation is  $\frac{1200}{\text{feet.}}$

- ✓ **Checkpoint** Complete the following exercise.

### Homework

5. In the morning, the temperature was  $-3^{\circ}\text{F}$ . In the afternoon, the temperature was  $21^{\circ}\text{F}$ . What was the change in temperature?

$24^{\circ}\text{F}$