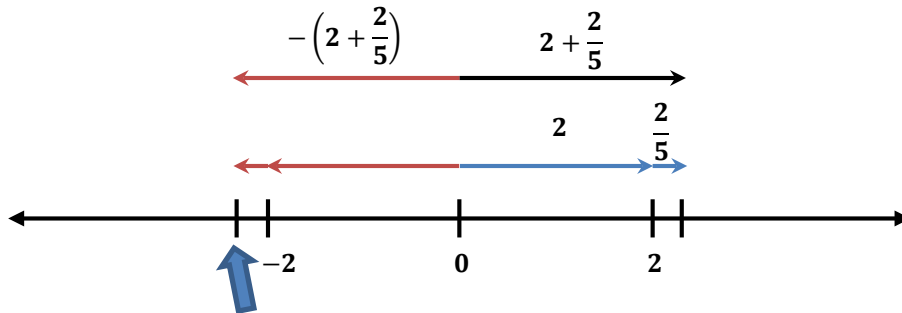


**Example 2: A Mixed Number Is a Sum**

Use the number line model shown below to explain and write the opposite of  $2\frac{2}{5}$  as a sum of two rational numbers.



The opposite of a sum (top single arrow pointing left) and the sum of the opposites correspond to the same point on the number line.

**Exercise 2**

Rewrite each mixed number as the sum of two signed numbers.

a.  $-9\frac{5}{8}$

b.  $-2\frac{1}{2}$

c.  $8\frac{11}{12}$

**Exercise 3**

Represent each sum as a mixed number.

a.  $-1 + \left(-\frac{5}{12}\right)$

b.  $30 + \frac{1}{8}$

c.  $-17 + \left(-\frac{1}{9}\right)$

**Exercise 4**

Mr. Mitchell lost 10 pounds over the summer by jogging each week. By winter, he had gained  $5\frac{1}{8}$  pounds. Represent this situation with an expression involving signed numbers. What is the overall change in Mr. Mitchell's weight?

**Exercise 5**

Jamal is completing a math problem and represents the expression  $-5\frac{5}{7} + 8 - 3\frac{2}{7}$  with a single rational number as shown in the steps below. Justify each of Jamal's steps. Then, show another way to solve the problem.

$$\begin{aligned} &= -5\frac{5}{7} + 8 + \left(-3\frac{2}{7}\right) \\ &= -5\frac{5}{7} + \left(-3\frac{2}{7}\right) + 8 \\ &= -5 + \left(-\frac{5}{7}\right) + (-3) + \left(-\frac{2}{7}\right) + 8 \\ &= -5 + \left(-\frac{5}{7}\right) + \left(-\frac{2}{7}\right) + (-3) + 8 \\ &= -5 + (-1) + (-3) + 8 \\ &= -6 + (-3) + 8 \\ &= (-9) + 8 \\ &= -1 \end{aligned}$$