8.3 Adding Real Numbers

**Learning Objectives:**
1. Addition of real numbers.
2. Find the opposite of a number.
3. Solve word problems that involve addition of real numbers.

1. **Adding Real Numbers**

To Add Real Numbers
1. **Same sign**—is to add their absolute values. Use their common sign as the sign of the answer.
2. **Different sign**—is to subtract their absolute values. Give the answer the same sign as the number with the larger absolute value.

**Example 1.** Add each of the following

1. $-9 + (-4)$
2. $-15.3 + 27.03$
3. $\left( -\frac{3}{5} \right) + \left( -\frac{1}{2} \right)$

2. **Finding the Opposites**

**Opposite or Additive Inverse**—Two numbers that are the same distance from 0 but lie on opposite side of 0 are called **opposites** or **additive inverses** of each other.

**Example 2.** Find the additive inverse or opposite.

1. $-9$
2. $0$

**Example 3.** Simplify each expression.

1. $-(-8.4)$
2. $-\left| -\frac{2}{3} \right|$
3. **Solving Problems That Involve Addition**

**Example 4.** Solve each of the following.

1. At the beginning of a chemistry experiment, Amy measured the temperature of a liquid to be -5°C. During the experiment, the temperature rose 14°C. What was the liquid’s temperature at the end of the experiment?

2. A local restaurant reported net incomes of $1,397, –$2,042 and $809 for the past three months. What was its total net income for the three months?