

# Adding Integers (Pages 64–69)

The rules for adding integers are shown below. When you add two numbers like 5 and  $-5$ , the result is a **zero pair**, since  $5 + (-5) = 0$ . If the sum of two numbers is zero, the numbers are called **opposites** or **additive inverses**.

<b>Adding Integers</b>	<ul style="list-style-type: none"> <li>To add integers with the same sign, add their absolute values. The sum has the same sign as the integers.</li> <li>To add integers with different signs, subtract the lesser absolute value from the greater absolute value and give the result the same sign as the integer with the greater absolute value.</li> </ul>
<b>Additive Inverse Property</b>	For every number $a$ , $a + (-a) = 0$ .

## EXAMPLES

**A** Find  $-9 + 16$ .

*The addends have different signs, so find the difference of their absolute values.*

$$|16| - |-9| = 16 - 9 \text{ or } 7$$

*Use the sign of 16 because it has the greater absolute value.*

$$-9 + 16 = 7$$

**B** Simplify  $-11x + (-4x)$ .

*Use the Distributive Property and the rules for adding integers.*

$$\begin{aligned} -11x + (-4x) &= [-11 + (-4)]x \\ &= -15x \end{aligned}$$

*The coefficient is negative because  $-11$  and  $-4$  are both negative.*

### Try These Together

1. Find  $-3 + (-7)$ .

*HINT: The integers have the same sign.*

2. Simplify  $-9x + 3x$ .

*HINT: The result has the same sign as the integer with the greater absolute value.*

## PRACTICE

*Find each sum.*

3.  $-100 + 82$

4.  $-8 + 17$

5.  $-6 + (-8)$

6.  $3 + (-7)$

7.  $11 + 9$

8.  $5 + (-14)$

9.  $-15 + (-3)$

10.  $-4 + 17$

*Simplify each expression.*

11.  $6t + (-14t)$

12.  $-7s + (-15s)$

13.  $-4a + 3a$

14.  $6n + (-2n) + 3n$



15. **Standardized Test Practice** The temperature rose  $20^\circ\text{C}$  from  $-4^\circ\text{C}$  one day in April. What was the new temperature?

A  $-24^\circ\text{C}$

B  $-16^\circ\text{C}$

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

D  $16^\circ\text{C}$

Answers: 1.  $-10$  2.  $-6x$  3.  $-18$  4.  $9$  5.  $-14$  6.  $-4$  7.  $20$  8.  $-9$  9.  $-18$  10.  $13$  11.  $-8t$  12.  $-22s$  13.  $-a$  14.  $7n$  15. D