

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**.

Adding Integers	<ul style="list-style-type: none"> To add integers with the same sign, add their absolute values. The sum has the same sign as the integers. 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.
Additive Inverse Property	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°C from -4°C one day in April. What was the new temperature?

A -24°C

B -16°C

C 24°C

D 16°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