

# Lesson 8 Reteach

## Factor Linear Expressions

A **linear expression** is in factored form when it is expressed as the product of its factors.

### Example 1

**Factor  $5x + 10$ .**

Use the GCF to factor the linear expression.

$$5x = \underbrace{5}_{\text{GCF}} \cdot x \quad \text{Write the prime factorization of } 5x \text{ and } 10.$$

$$10 = \underbrace{5}_{\text{GCF}} \cdot 2 \quad \text{Circle the common factors.}$$

The GCF of  $5x$  and  $10$  is  $5$ . Write each term as a product of the GCF and its remaining factors.

$$\begin{aligned} 5x + 10 &= 5(x) + 5(2) \\ &= 5(x + 2) \quad \text{Distributive Property} \end{aligned}$$

$$\text{So, } 5x + 10 = 5(x + 2).$$

### Example 2

**Factor  $3x + 8$ .**

$$3x = 3 \cdot x$$

$$8 = 2 \cdot 2 \cdot 2$$

There are no common factors, so  $3x + 8$  *cannot be factored*.

### Exercises

**Factor each expression. If the expression cannot be factored, write *cannot be factored*.**

1.  $15x + 10$      **$5(3x + 2)$**

2.  $7x - 3$     **cannot be factored**

3.  $6x + 9$      **$3(x + 2)$**

4.  $30x - 25$      **$5(6x - 5)$**

5.  $13x + 14$     **cannot be factored**

6.  $50x - 75$      **$25(2x - 3)$**

7.  $24x - 18$      **$6(4x - 3)$**

8.  $18x + 13$     **cannot be factored**

9.  $16x - 12$      **$4(4x - 3)$**

10.  $36x + 45$      **$9(4x + 5)$**

# Lesson 8 Skills Practice

## Factor Linear Expressions

Factor each expression. If the expression cannot be factored, write *cannot be factored*.

1.  $17x + 34$     **$17(x + 2)$**

2.  $10x + 25$     **$5(2x + 5)$**

3.  $30x + 18$     **$6(5x + 3)$**

4.  $45x - 18$     **$9(5x - 2)$**

5.  $38x - 12$     **$2(17x - 6)$**

6.  $28x + 15$    **cannot be factored**

7.  $3x - 27$     **$3(x - 9)$**

8.  $6x + 24$     **$6(x + 4)$**

9.  $26x - 5$    **cannot be factored**

10.  $48x + 56$     **$8(6x + 7)$**

11.  $15x - 14$    **cannot be factored**

12.  $20x - 100$     **$20(x - 5)$**

13.  $7x + 35$     **$7(x + 5)$**

14.  $7x + 17$    **cannot be factored**

15.  $9x - 63$     **$9(x - 7)$**

16.  $39x + 13$     **$13(3x + 1)$**

17.  $8x + 15$    **cannot be factored**

18.  $18x - 12$     **$6(3x - 2)$**

19.  $24x + 48$     **$24(x + 2)$**

20.  $45x - 81$     **$9(5x - 9)$**

21. The area of a rectangular sandbox is  $(5x + 40)$  feet. Factor  $5x + 40$  to find possible dimensions of the sandbox.    **$5(x + 8)$  ft**