NAME _____ DATE _____ PERIOD _____

Lesson 5-8 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.

$5x = \textcircled{5} \cdot x$ Write the prime factorization of $5x$ and 10.

$10 = \textcircled{5} \cdot 2$ 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.

$5\boldsymbol{x} + 10 = 5(x) + 5(2)$

$= 5(x + 2)$ Distributive Property

So, $5x + 10 = 5(x + 2)$.

Example 2

Factor $3\boldsymbol{x} + 8$.

$3\boldsymbol{x} = 3 \cdot \boldsymbol{x}$

$8 = 2 \cdot 2 \cdot 2$

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. $15x + 10$

2. $7x - 3$

3. $6x + 9$

4. $30x - 25$

5. $13x + 14$

6. $50x - 75$

7. $24x - 18$

8. $18x + 13$

9. $16x - 12$

10. $36x + 45$

Lesson 8 Skills Practice

Factor Linear Expressions

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

1. $17x + 34$

2. $10x + 25$

5. $38x - 12$

6. $28x + 15$

9. $26x - 5$

10. $48x + 56$

13. $7x + 35$

14. $7x + 17$

17. $8x + 15$

18. $18x - 12$

19. $24x + 48$

20. $45x - 81$

21. The area of a rectangular sandbox is $(5x + 40)$ feet. Factor $5x + 40$ to find possible dimensions of the sandbox. (more than one answer)