

Name: _____

Factoring Expressions

Simplify each expression.

1. $10x^2 + 12x$

- ☐ A. $2x(5x - 6)$
- ☐ B. $2x(5x + 12)$
- ☐ C. $-2x(5x - 6)$
- ☐ D. $2x(5x + 6)$

2. $2x^2 - 8$

- ☐ A. $2(x + 2)(x - 2)$
- ☐ B. $2(x - 2)^2$
- ☐ C. $(2x + 2)(x - 2)$
- ☐ D. $2(x^2 - 4)$

3. $6x^2 + 14x$

- ☐ A. $2x(3x + 14)$
- ☐ B. $2x(3x + 7)$
- ☐ C. $2x^2(3x + 7)$
- ☐ D. $2(3x + 7)$

4. $x^2 - 16$

- ☐ A. $(4 + x)(4 - x)$
- ☐ B. $(x - 4)^2$
- ☐ C. $(4 - x)^2$
- ☐ D. $(x + 4)(x - 4)$

5. $x^4 - 16$

- ☐ A. $(x - 2)(x + 2)(x^2 + 4)$
- ☐ B. $(x - 2)(x + 2)(x - 2)(x + 2)$
- ☐ C. $(x^2 - 4)(x^2 + 4)$
- ☐ D. $(x - 2)(x^3 + 8)$

6. $x^4 - 81$

- ☐ A. $(x - 3)(x + 3)(x - 3)(x + 3)$
- ☐ B. $(x - 3)(x^3 + 27)$
- ☐ C. $(x - 3)(x + 3)(x^2 + 9)$
- ☐ D. $(x^2 - 9)(x^2 + 9)$

7. $3x^2 - 12$

- ☐ A. $3(x - 2)^2$
- ☐ B. $3(x + 2)(x - 2)$
- ☐ C. $3(x^2 - 4)$
- ☐ D. $(3x + 2)(x - 2)$

8. $4x^2 - 36$

- ☐ A. $4(x^2 - 9)$
- ☐ B. $4(x - 3)^2$
- ☐ C. $(4x + 3)(x - 3)$
- ☐ D. $4(x + 3)(x - 3)$

9. $x^2 + 4x + 4$

- ☐ A. $(x + 2)^2$
- ☐ B. $x^2 + 4$
- ☐ C. $(x + 4)^2$
- ☐ D. $2x^2 + 4$

10. $x^2 - 10x + 25$

- ☐ A. $(x - 5)^2$
- ☐ B. $2x^2 - 25$
- ☐ C. $(x - 10)^2$
- ☐ D. $x^2 - 25$

11. $x^2 + 6x + 8$

- ☐ A. $(x + 2)(x - 4)$
- ☐ B. $(x - 2)(x - 4)$
- ☐ C. $(x - 2)(x + 4)$
- ☐ D. $(x + 2)(x + 4)$

12. Which binomial is a factor of $x^2 + 2x - 8$?

- ☐ A. $(x + 2)$
- ☐ B. $(x + 8)$
- ☐ C. $(x - 1)$
- ☐ D. $(x + 4)$

13. Which binomial is a factor of $x^2 - 7x + 12$?

- ☐ A. $(x - 3)$
- ☐ B. $(x + 4)$
- ☐ C. $(x - 12)$
- ☐ D. $(x - 2)$

14. $4x^3 + 20x^2 - 144x$

- ☐ A. $4x(x + 9)(x - 4)$
- ☐ B. $4(x^2 + 9)(x - 4)$
- ☐ C. $4(x^2 - 4)(x + 9)$
- ☐ D. $4x(x - 9)(x + 4)$

15. $5x^3 - 40x^2 + 35x$

- ☐ A. $5x(x - 1)(x - 7)$
- ☐ B. $5(x^3 - 8x^2 + 7x)$
- ☐ C. $5x(x - 1)(x + 7)$
- ☐ D. $-5(x^3 + 8x + 7)$

16. $3x^3y + 18x^2y + 24xy$

- ☐ A. $3xy(x + 4)(x + 2)$
- ☐ B. $3xy(x + 8)(x + 1)$
- ☐ C. $xy(3x + 4)(x + 6)$
- ☐ D. $3xy(x^2 + 6x + 8)$