NAME _____   **DATE** _____

Module 12   Simplifying Algebraic Expressions by
Factoring Polynomials
Lesson 1   Factoring by Removing the Greatest
Common Factor

Factor, if possible.

1. $3x + 6$

_____

2. $5y - 25$

_____

3. $8z - 12$

_____

4. $15m - 35$

_____

5. $14m^4 - 7m^2$

_____

6. $5t^3 + 10t^2$

_____

7. $12a^5 - 6a^3$

_____

8. $2b^4 + 8b^2$

_____

9. $8t^4 - 12t^2 + 16$

_____

10. $3a^2 - 12a - 6$

_____

11. $4c^2 + 7c - 3$

_____

12. $18r^3 + 24r^2 + 12r$

_____

13. $16x^3 - 8x^2 + 4x$

_____

14. $15f^4 - 10f^2 + 25f$

_____

15. $x^2y - y^2x$

_____

16. $21c^2d^2 - 12cd^3$

_____

17. $2m^2n^4 - 5pq$

_____

18. $30p^3q^4 - 40pq^3$

_____

19. $8x^2y^2 - 32xy^3 + 16y^2$

_____

20. $14a^4b - 21a^3b^2 + 28a^2b^3$

_____

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21. $9y^3z - 3yz^3 + 18z$

22. $12r^3t^2 + 18r^2s^3 + 36s^2t$

23. $56q^4r^3 + 14q^3r^5 - 42q^2r^4$

24. $92cd^5 - 115c^2d^2 - 46c^5d^3$

Journal

1. Find the prime factors of $12x^2y^5$ and $60x^4y^3$. Use the prime factors to find the GCF of the expressions.
2. Explain how factoring a polynomial is like using the Distributive Property and multiplying in reverse.
3. Lester and Michael have both factored the polynomial $12x^2 + 16x$. Lester factored it as $4x(3x + 4)$, and Michael factored it as $2x(6x + 8)$. Who is correct and why?
4. Explain how to factor $30x^3y + 20xy^3 - 5xy$.
5. Write a trinomial of one variable of the fourth degree and factor it. The trinomial must have a common monomial factor.

Cumulative Review

Simplify.

1. $(x - 2)(x + 2)$ _____

2. $(a - 3)^2$ _____

3. $(3c - 1)(c + 2)$ _____

4. $(s + 1)(s - 4)$ _____

5. $(3m - 4)(3m + 4)$ _____

6. $(4d + 3)(d - 5)$ _____

7. $(m + 5)^2$ _____

8. $(5g + 2)(g - 4)$ _____

9. $(k - 6)(k - 2)$ _____

10. $(n + 5)(n + 8)$ _____

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