NAME   **DATE**

Module 12 Simplifying Algebraic Expressions by
                      Factoring Polynominals
Lesson 7   Dividing Polynomials Using Factoring

independent practice

Simplify by factoring.

1. $\dfrac{x^2 - 10x - 24}{x + 2}$ _____

2. $\dfrac{g^2 - 4g + 3}{g - 3}$ _____

3. $\dfrac{m^2 + 8m + 15}{m + 3}$ _____

4. $\dfrac{j^2 + 7j - 30}{j + 10}$ _____

5. $\dfrac{c^2 - 15c + 56}{c - 8}$ _____

6. $\dfrac{d^2 - 12d - 64}{d + 4}$ _____

7. $\dfrac{6y^2 + 11y - 2}{y + 2}$ _____

8. $\dfrac{4p^2 - 17p - 15}{4p + 3}$ _____

9. $\dfrac{9s^2 - 3s - 6}{3s - 3}$ _____

10. $\dfrac{16m^2 - 9}{4m - 3}$ _____

11. $\dfrac{10a^2 + 21a - 10}{2a + 5}$ _____

12. $\dfrac{3c^2 - 13c - 30}{3c + 5}$ _____

13. $\dfrac{2m^2 - 8}{2m - 4}$ _____

14. $\dfrac{3r^2 - 27}{3r + 9}$ _____

15. $\dfrac{3k^2 - 15k + 12}{3k - 3}$ _____

16. $\dfrac{2z^2 + 34z + 132}{2z + 12}$ _____

17. $\dfrac{3g^2 + 14g + 8}{2g + 8}$ _____

18. $\dfrac{2y^2 + y - 28}{3y + 12}$ _____

19. $\dfrac{8f^2 + 2f - 3}{6f - 3}$ _____

20. $\dfrac{10z^2 - 27z + 5}{25z - 5}$ _____

21. $\dfrac{6x^2 + 31x + 18}{6x + 27}$ _____

22. $\dfrac{5x^2 + 23x - 42}{20x - 28}$ _____

23. $\dfrac{4t^2 - 100}{8t - 40}$ _____

24. $\dfrac{2k^2 - 32}{8k + 32}$ _____

Journal

1. Use factoring to find two polynomials whose quotient is $x - 7$.
2. Lawanda found the quotient of $x^2 + 2x - 48$ and $x - 6$ using long division. Jason found the quotient by factoring. Show that they will get the same result by using their two different methods.
3. Explain how to find the quotient of $6x^2 + 23x - 4$ and $3x + 12$ using factoring.
4. Give an example of two polynomials whose quotient cannot be found by factoring. Show that the expression cannot be simplified.

410-467-3300

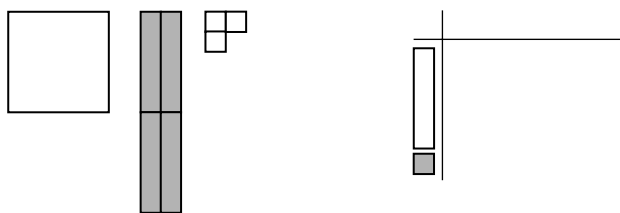## Cumulative Review

Factor completely.

1. $6x^2 + 24x - 3$ _____

2. $16q^2 - 9$ _____

3. $g^2 + 3g - 28$ _____

4. $y^2 - 7y + 12$ _____

5. $2a^2 + 10a - 3ab - 15b$ _____

6. $4m^2 - 20m + 25$ _____

7. $36p^2 - 121r^2$ _____

8. $u^2 + 12uv + 27v^2$ _____

9. $5d^2 + 19d - 4$ _____

10. $18m^2 - 15mn - 12n^2$ _____

Manipulatives

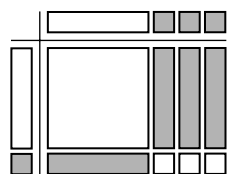Simplify $\dfrac{x^2 - 4x + 3}{x - 1}$ using algebra tiles.

Step 1: Model $x^2 - 4x + 3$ and $x - 1$ with tiles.

Step 2: Fill in the rectangle with tiles from $x^2 - 4x + 3$ using $x - 1$ as the length.

Step 3: Find the width of the rectangle.

The width of the rectangle is $x - 3$. The quotient is $x - 3$.

Factor using algebra tiles.

1. $\dfrac{3x^2 + 6x}{3x}$

_____

2. $\dfrac{2w^2 + 8w}{2w}$

_____

3. $\dfrac{b^2 + 3b + 2}{b + 2}$

_____

4. $\dfrac{j^2 - 5j - 6}{j + 1}$

_____