NAME _____ DATE _____

Module 11 Simplifying Algebraic Expressions with Polynomials
Lesson 6 Dividing Polynomials by Monomials

independent practice

Simplify.

1. $\frac{8x^2}{4}$ _____
2. $\frac{15a^2}{21}$ _____
3. $\frac{-10c^3}{4}$ _____
4. $\frac{7p^3}{p}$ _____
5. $\frac{32n^5}{8n^3}$ _____
6. $\frac{-45z^8}{27z^3}$ _____
7. $\frac{-14a^2b}{2ab}$ _____
8. $\frac{28x^2y^2z}{35xz}$ _____
9. $\frac{17p^2qr^2}{3m^2n^3}$ _____
10. $\frac{8c + 4}{2}$ _____
11. $\frac{18m + 3}{3}$ _____
12. $\frac{21f^2 + 7}{28}$ _____
13. $\frac{15d + 9}{6}$ _____
14. $\frac{18x^3 + 12x^2}{6x}$ _____
15. $\frac{3a^7 - 9a^4 + 6a^2}{3a}$ _____
16. $\frac{25n^6 - 15n^5 + 10n^4}{5n^3}$ _____
17. $\frac{4f^9 - 16f^5 + 8f^3}{8f}$ _____
18. $\frac{m^6n^3 + m^5n^4 - m^3n^2}{m^2n}$ _____
19. $\frac{4p^7q^5 + 8p^5q^6 - 2p^4q^2}{2p^3q^2}$ _____
20. $\frac{5a^9c^2 + 20a^5c^5 - 15a^4c^2}{10a^4c^2}$ _____

Journal

1. Pablo believes the simplest form of $\frac{8a^2b - 4a^2b^3}{2ab^2}$ is $\frac{4a^2b - 2a^2b^3}{ab^2}$. Monique believes the simplest form is $\frac{8a}{2b} - \frac{4ab}{2}$. Is either student correct? Explain why or why not.
2. In the case of a monomial divided by a monomial, what is the process for assuring the expression is in simplest form? Use an example to explain the reasoning.
3. In some detail, explain why the expression $\frac{3m^2x - 7n^3p^5}{2q^4z^2}$ is already in simplest form.
4. In your own words, explain how to simplify the expression $\frac{12x^2y - 3xy^2}{6xy}$.
5. When dividing a polynomial by a monomial, explain why it is okay to divide each term in the polynomial by the monomial.

Cumulative Review

Simplify.

1. $3x^2 + 5x^2$

2. $3x^2 \cdot 5x^2$

3. $4a^2b^3 \cdot 5b^2c^5$

4. $(14y^3 + 12x^2) - (7y^3 + 14x^2)$

5. $(3pq)(p^2q + 2q^2)$

6. $(3qr)(qr - 4)$

7. $(m - 3)(m - 2)$

8. $(2g^2 - 3)(4g + 1)$

9.
$$\begin{array}{r} 17d^2 + 22f^5 - 3g^3 - 5 \\ +\ \ 4d^2 - 21f^5 + 3g^3 \quad\quad \\ \hline \end{array}$$

10.
$$\begin{array}{r} 4p^2q^3 + 2p^3q^2 - 7pq + 3 \\ -\ (4p^2q^3 + 2p^3q^2 + 7pq - 3) \\ \hline \end{array}$$