

Name _____

Date _____

Practice Set 6.5
Dividing Polynomials

Divide each expression using the quotient rule. Express any numerical answers in exponential form.

1. $\frac{5^7}{5^2}$ 1. _____

2. $\frac{x^9}{x^6}$ 2. _____

3. $\frac{x^5 y^{10}}{x^2 y}$ 3. _____

4. $\frac{x^{20} y^{17}}{x^9 y^4}$ 4. _____

Use the zero-exponent rule to simplify each expression.

5. 3^0 5. _____

6. $(-4)^0$ 6. _____

7. -5^0 7. _____

8. $45x^0$ 8. _____

Simplify each expression using the quotients-to-powers rule.

9. $\left(\frac{x}{4}\right)^2$ 9. _____

10. $\left(\frac{2x^3}{3}\right)^3$ 10. _____

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11. $\left(\frac{-6x^4}{7}\right)^2$

11. _____

12. $\left(\frac{x^3y^4}{2z^2}\right)^4$

12. _____

Divide the monomials.

13. $\frac{25x^9}{5x^2}$

13. _____

14. $\frac{-5x^{10}y^7z^3}{10x^5y^2z}$

14. _____

15. $\frac{30a^2b^4c^8}{5abc}$

15. _____

16. $\frac{-20x^{12}y^9}{35x^7y^5}$

16. _____

Divide the polynomial by the monomial.

17. $\frac{40x^5 + 15x^2}{5}$

17. _____

18. $\frac{15y^4 - 42y^3}{12y^2}$

18. _____

19. $\frac{12x^5y^6 - 18x^3y^7 + 6x^2y^8}{-3x^2y^4}$

19. _____

20. $\frac{20x^5 + 15x^3 + 5x^2}{5x^2}$

20. _____