



REVIEW KEY VOCABULARY

- scientific notation, p. 331
- polynomial, p. 337
- polynomial function, p. 337
- leading coefficient, p. 337
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VOCABULARY EXERCISES

1. Copy and complete: At each of its turning points, the graph of a polynomial function has a(n) ? or a(n) ?.
2. **WRITING** Explain how you can tell whether a solution of a polynomial equation is a repeated solution when the equation is written in factored form.
3. **WRITING** Explain how you can tell whether a number is expressed in scientific notation.
4. Let f be a fourth-degree polynomial function with four distinct real zeros. How many turning points does the graph of f have?

REVIEW EXAMPLES AND EXERCISES

Use the review examples and exercises below to check your understanding of the concepts you have learned in each lesson of Chapter 5.

5.1 Use Properties of Exponents

pp. 330–335

EXAMPLE

Simplify the expression.

$$\begin{aligned} (x^2y^3)^3x^4 &= (x^2)^3(y^3)^3x^4 && \text{Power of a product property} \\ &= x^6y^9x^4 && \text{Power of a power property} \\ &= x^{6+4}y^9 && \text{Product of powers property} \\ &= x^{10}y^9 && \text{Simplify exponent.} \end{aligned}$$

EXERCISES

Evaluate or simplify the expression. Tell which properties of exponents you used.

5. $2^2 \cdot 2^5$

6. $(3^2)^{-3}(3^3)$

7. $(x^{-2}y^5)^2$

8. $(3x^4y^{-2})^{-3}$

9. $\left(\frac{3}{4}\right)^{-2}$

10. $\frac{8 \times 10^7}{2 \times 10^3}$

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

12. $\frac{2x^{-6}y^5}{16x^3y^{-2}}$

EXAMPLES
1, 2, 3, and 4on pp. 330–332
for Exs. 5–12