

Chapter 7 Prerequisite Skills

BLM 7-1

Apply the Exponent Laws

1. Simplify. Identify the exponent law that you used.

a) $(c)^3(c)^4(c)^5$
 b) $(4x^2y)(3xy^3)$
 c) $(2m)(5n^3)$

2. Simplify. Identify the exponent law that you used.

a) $\frac{w^8}{w^3}$
 b) $\frac{(4p)(pq)}{8q^2}$
 c) $\frac{-42x^2y^3}{14x^2y}$

3. Simplify. Identify the exponent law that you used.

a) $(x^3)^5$
 b) $(m^2n^3)^4$
 c) $(3p^2q)^3$

4. Simplify. Identify the exponent laws that you used.

a) $\frac{(2m^2)(2mn^2)^2}{(2m^2n)^3}$
 b) $\frac{(x^2)^3(xy^2z)^2}{x^3y^4}$

Solve Quadratic Equations

5. Solve by factoring.

a) $x^2 - 2x - 3 = 0$
 b) $6m^2 + m = 12$
 c) $4p^2 + 12p + 9 = 0$
 d) $2r^2 + 4 = 9r$
 e) $6y^2 + 19y + 10 = 0$

6. Solve by applying the quadratic formula.

a) $2x^2 - x - 4 = 0$
 b) $v^2 = 2v + 5$
 c) $d = 4d^2 - 1$
 d) $6m^2 + 4m - 8 = 0$
 e) $-2a^2 + 7 = 12a$

Simplify a Radical Expression

7. Simplify.

a) $\sqrt{12}$
 b) $3\sqrt{27}$
 c) $\frac{12 + \sqrt{72}}{6}$
 d) $\frac{-6 + \sqrt{32}}{2}$

Apply the Power Law of Logarithms

8. Evaluate, using the power law of logarithms.

a) $\log_6 36^4$
 b) $\log_5 \frac{1}{125}$
 c) $\log_4 \sqrt[3]{16}$
 d) $\log_2 \sqrt{0.125}$

9. Evaluate, correct to three decimal places.

a) $\log_2 5$
 b) $\log_8 3$
 c) $\log_2 10$
 d) $\log_{\frac{2}{3}} \frac{1}{3}$

10. Solve for t , correct to two decimal places.

a) $4^t = 7$
 b) $3.9^{t-6} = 12.4$
 c) $2^{3t} = 15$
 d) $\left(\frac{4}{3}\right)^t = \frac{7}{6}$