

Answers to Sample Prerequisite Problems

1. Completely factor the following

a. $(x + 4)(x - 15)$

b. $(3y - 2)(y + 6)$

c. $3p^2(5 + p)(5 - p)$

d. $(2x - y)(2x - 5)$

2. Simplify

a. $-14x^2 + 9x + 8$

b. $x^3 - 8$

3. Simplify

a. a^{17}

b. $\frac{c^2}{a^4b^6}$

c. $\frac{c^2}{a^3b^4}$

4. Simplify

a. $5\sqrt{2}$

b. $2|x|\sqrt{11x}$

c. $3xy^4$

5. Simplify by writing as one fraction

a. $\frac{5}{24}$

b. $\frac{31}{14x}$

c. $\frac{11x - 1}{x^2 - x - 2}$

d. $\frac{10x^2 - 14x + 15}{x^2(x - 3)}$

6. Solve

a. $x = \frac{15}{7}$

b. $x = -\frac{105}{8}$

c. $x = 4, -\frac{2}{3}$

7. Solve

a. $x = \frac{1}{3}, -4$

b. $p = \frac{3 \pm \sqrt{13}}{2}$

c. $x = -1 \pm 2\sqrt{3}$

8. The length l of a rectangle is 3 more than twice its width w . Write a formula for the perimeter P and area A of the rectangle in terms of the width w ONLY.

$$P = 6w + 6$$

$$A = 2w^2 + 3w$$

9. Write the following in interval notation

a. $(-2, 7)$

b. $[4, 9)$

c. $[-5, \infty)$

d. $(0, \infty)$

10. Solve and express answer in interval notation

a. $(7, \infty)$

b. $[\frac{7}{9}, \infty)$