

## Section 7.1: Extraction of Roots and Properties of Square Roots

1. What number(s) squared give(s) 25?
  - (a) 5
  - (b) 5 and -5
  - (c)  $\frac{25}{2}$
  - (d)  $\frac{25}{2}$  and  $-\frac{25}{2}$
2. Find all solutions to  $x^2 = 25$ .
  - (a)  $x = 5$
  - (b)  $x = 5$  and  $x = -5$
  - (c)  $x = \frac{25}{2}$
  - (d)  $x = \frac{25}{2}$  and  $x = -\frac{25}{2}$
3. What is  $\sqrt{-25}$  ?
  - (a) -5
  - (b) 5
  - (c) not a real number
4. What is  $-\sqrt{25}$  ?
  - (a) -5
  - (b) 5
  - (c) not a real number
5. **True or False:** 7 and -7 are both square roots of 49.
  - (a) True, and I am very confident
  - (b) True, but I am not very confident

- (c) False, but I am not very confident
- (d) False, and I am very confident

6. **True or False:**  $\sqrt{49} = -7$

- (a) True, and I am very confident
- (b) True, but I am not very confident
- (c) False, but I am not very confident
- (d) False, and I am very confident

7. **True or False:**  $-\sqrt{64} = -8$

- (a) True, and I am very confident
- (b) True, but I am not very confident
- (c) False, but I am not very confident
- (d) False, and I am very confident

8. Simplify:  $\sqrt{-9^2}$

- (a) -9
- (b) 9
- (c) not a real number

9. Simplify:  $\sqrt{(-9)^2}$

- (a) -9
- (b) 9
- (c) not a real number

10. Simplify:  $\sqrt{24}$

- (a)  $12\sqrt{2}$
- (b)  $4\sqrt{6}$
- (c)  $8\sqrt{3}$
- (d)  $2\sqrt{6}$

11. Simplify:  $\sqrt{250}$
- (a)  $5\sqrt{50}$
  - (b)  $5\sqrt{10}$
  - (c)  $10\sqrt{5}$
  - (d)  $2\sqrt{125}$
12. True or False: The solution to  $x^2 = 10$  is  $x = \sqrt{10}$ .
- (a) True, and I am very confident
  - (b) True, but I am not very confident
  - (c) False, but I am not very confident
  - (d) False, and I am very confident
13. Find all solutions to  $(x - 3)^2 = 25$ .
- (a)  $x = 5$  and  $x = -5$
  - (b)  $x = \sqrt{28}$  and  $x = -\sqrt{28}$
  - (c)  $x = 8$
  - (d)  $x = 8$  and  $x = -2$
14. Find all solutions to  $4x^2 = 36$ .
- (a)  $x = \frac{3}{2}$  and  $x = -\frac{3}{2}$
  - (b)  $x = 6$  and  $x = -6$
  - (c)  $x = 3$  and  $x = -3$
15. Find all solutions to  $4(x - 2)^2 = 100$ .
- (a)  $x = 7$  and  $x = -3$
  - (b)  $x = \frac{9}{2}$  and  $x = -\frac{1}{2}$
  - (c)  $x = 18$  and  $x = -2$
  - (d)  $x = 5$  and  $x = -5$
16. A home-owner wishes to build an addition. The addition will be a rectangular room with an area of 120 square feet, with the length equal to twice the width. If  $w$  is the width of the addition, which equation must be true?

- (a)  $3w = 120$
- (b)  $w^2 = 120$
- (c)  $\frac{1}{2}w^2 = 120$
- (d)  $2w^2 = 120$

17. True or False: All quadratic equations have two solutions.

- (a) True, and I am very confident
- (b) True, but I am not very confident
- (c) False, but I am not very confident
- (d) False, and I am very confident