

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