

Section 10.1 Evaluating Radical Expressions and Graphing Square Root and Cube Root Functions

1. $\sqrt{4x^2 + 16} =$

- (a) $2x + 4$
- (b) $|2x + 4|$
- (c) $2\sqrt{x^2 + 4}$
- (d) This cannot be simplified.

2. $\sqrt{x^2 + 81} =$

- (a) $x + 9$
- (b) $|x + 9|$
- (c) $3\sqrt{x^2 + 9}$
- (d) This cannot be simplified.

3. $\sqrt{9x^2 + 81} =$

- (a) $3x + 9$
- (b) $|3x + 9|$
- (c) $3\sqrt{x^2 + 9}$
- (d) This cannot be simplified.

4. $\sqrt{x^2 + 100} =$

- (a) $|x| + 10$
- (b) $|x + 10|$
- (c) $x + 10$
- (d) This cannot be simplified.

5. $\sqrt{4x^2 + 100} =$

- (a) $2x + 10$
- (b) $|2x + 10|$
- (c) $2\sqrt{x^2 + 25}$
- (d) This cannot be simplified.

6. Simplify: $\sqrt[3]{-9^3}$

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

7. Find $\sqrt[3]{-8}$.

- (a) 2
- (b) -2
- (c) $2i$
- (d) The expression does not exist.

8. Simplify: $\sqrt{x^3}$

- (a) $x\sqrt{x}$
- (b) $x\sqrt{x^2}$
- (c) $x^2\sqrt{x}$
- (d) x

9. Assuming $x > 0$, simplify $\sqrt{50x^2}$.

- (a) $5x\sqrt{2x}$
- (b) $5x\sqrt{2}$
- (c) $5\sqrt{2x^2}$
- (d) $25x\sqrt{2}$

10. Simplify: $\sqrt{75a^4}$

- (a) $5a^2\sqrt{3}$
- (b) $3a^2\sqrt{5}$
- (c) $25a\sqrt{3a}$
- (d) $3a^2\sqrt{25}$

11. Simplify $\sqrt[3]{54x^4}$.

- (a) $3x\sqrt[3]{6x^2}$
- (b) $27x^3\sqrt[3]{2x}$
- (c) $3x\sqrt[3]{2x}$
- (d) The expression cannot be simplified.