

1. Solve by factoring.

$$x^2 + 3x = 10$$

- A) $\{-2, 5\}$
- B) $\{2, -5\}$
- C) $\{-2, -5\}$
- D) $\{2, 5\}$

Ans: B Learning Objective: Solve quadratic equations by factoring.

2. Solve by factoring.

$$3x^2 + 16 = 16x$$

- A) $\{-4/3, 4\}$
- B) $\{4/3, 4\}$
- C) $\{3/4, 4\}$
- D) $\{-3/4, 4\}$

Ans: B Learning Objective: Solve quadratic equations by factoring.

3. Solve by using the square root method.

$$x^2 = 81$$

- A) $\{-9, 9\}$
- B) $\{-9\}$
- C) $\{9\}$
- D) $\{81, -81\}$

Ans: A Learning Objective: Use the square root method to solve quadratic equations.

4. Solve using the square root method.

$$(x - 5)^2 = 4$$

- A) $\{7\}$
- B) $\{7, 3\}$
- C) $\{3\}$
- D) $\{10\}$

Ans: B Learning Objective: Use the square root method to solve quadratic equations.

5. Solve using the square root method.

$$(x + 15)^2 = 10$$

- A) $\{15 + \sqrt{10}, 15 - \sqrt{10}\}$
- B) $\{-15 + \sqrt{10}\}$
- C) $\{-15, \sqrt{10}\}$
- D) $\{-15 + \sqrt{10}, -15 - \sqrt{10}\}$

Ans: D Learning Objective: Use the square root method to solve quadratic equations.

6. Solve using the square root method.

$$(x - 6)^2 = -49$$

- A) $\{6 + 7i, 6 - 7i\}$
 B) $\{6 + 7i\}$
 C) $\{13\}$
 D) $\{13, -1\}$

Ans: A Learning Objective: Use the square root method to solve quadratic equations.

7. Solve using the quadratic formula.

$$16y^2 + 56y - 91 = 0$$

- A) $\left\{ \frac{-7 - 2\sqrt{35}}{4} \right\}$
 B) $\left\{ \frac{7 + 2\sqrt{35}}{4} \right\}$
 C) $\left\{ \frac{7 + 2\sqrt{35}}{4}, \frac{7 - 2\sqrt{35}}{4} \right\}$
 D) $\left\{ \frac{-7 + 2\sqrt{35}}{4}, \frac{-7 - 2\sqrt{35}}{4} \right\}$

Ans: D Learning Objective: Use the quadratic formula to solve quadratic equations.

8. Solve by factoring.

$$5x^2 - 405 = 0$$

Ans: $\{-9, 9\}$

Learning Objective: Solve quadratic equations by factoring.

9. Solve using the quadratic formula. Express your answer as a decimal to two decimal places.

$$1.0x^2 + 1.4x - 0.2 = 0$$

Ans: $\{0.13, -1.53\}$

Learning Objective: Use the quadratic formula to solve quadratic equations.

10. Solve using the square root method.

$$(x - 12)^2 = 36$$

Ans: $\{6, 18\}$

Learning Objective: Use the square root method to solve quadratic equations.

11. Solve using the quadratic formula.

$$16y^2 + 48y - 111 = 0$$

- A) $\left\{ \frac{6+7\sqrt{3}}{4}, \frac{6-7\sqrt{3}}{4} \right\}$
- B) $\left\{ \frac{6+7\sqrt{3}}{4} \right\}$
- C) $\left\{ \frac{-6+7\sqrt{3}}{4}, \frac{-6-7\sqrt{3}}{4} \right\}$
- D) $\left\{ \frac{-6-7\sqrt{3}}{4} \right\}$

Ans: C Learning Objective: Use the quadratic formula to solve quadratic equations.

12. The area of a rectangle is 135 square feet. The width is 6 feet less than the length. Find the dimensions of the rectangle.

Ans: 15 ft by 9 ft

Learning Objective: Solve quadratic equations by factoring.

13. If a person drops a water balloon off the rooftop of a 121 foot building, the height of the water balloon is given by the equation
- $h = -16t^2 + 121$
- , where
- t
- is in seconds. When will the water balloon hit the ground?

Ans: 2.75 seconds

Learning Objective: Use the square root method to solve quadratic equations.

14. Solve
- $c^2 - 64 = 0$
- for
- c
- .

- A) $\{-8\}$
- B) $\{8\}$
- C) $\{-8, 8\}$
- D) no solution

Ans: C Learning Objective: Use the square root method to solve quadratic equations.

15. Solve
- $z^2 = 4z$
- for
- z
- .

- A) $\{-2\}$
- B) $\{0, 4\}$
- C) $\{-2, 2\}$
- D) $\{2\}$

Ans: B Learning Objective: Solve quadratic equations by factoring.

16. a1 Solve $b^2 + 16 = 0$ for b .

- A) $\{-4\}$
- B) $\{4\}$
- C) $\{-4, 4\}$
- D) $\{-4i, 4i\}$

Ans: D Learning Objective: Use the square root method to solve quadratic equations.