

**Assessment Title: Square Root Scoot**  
**Unit 3: Quadratic Functions: Working with Equations**

**Learning Targets:**

- I can solve a quadratic equation by square roots.
- I can solve quadratic equations with complex solutions.

Square Root Scoot

Print stations, and place them on the walls around the room.

Students should be split into 5 groups. Assign each group to a station. Have them complete Exercise #1. Then, ask them to scoot to the next station. While at the next station, students should check the work of the previous group and make corrections as needed. Then, they will complete Exercise #2. Students should be directed to scoot to next station. Repeat process until all stations have been completed.

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**Unit 3: Quadratic Functions: Working with Equations**

**Station 1:**

1.  $0 = x^2 + 9$ 
  - a. Solve by square roots.
  - b. Are the solutions rational, irrational, or complex?
  - c. Could the equation be solved by factoring? Explain.
  - d. How many real solutions exist?
  
2.  $0 = x^2$ 
  - a. Solve by square roots.
  - b. Are the solutions rational, irrational, or complex?
  - c. Could the equation be solved by factoring? Explain.
  - d. How many real solutions exist?
  
3.  $0 = 2x^2 - 8$ 
  - a. Solve by square roots.
  - b. Are the solutions rational, irrational, or complex?
  - c. Could the equation be solved by factoring? Explain.
  - d. How many real solutions exist?
  
4.  $0 = x^2 - 4$ 
  - a. Solve by square roots.
  - b. Are the solutions rational, irrational, or complex?
  - c. Could the equation be solved by factoring? Explain.
  - d. How many real solutions exist?
  
5.  $0 = x^2 - 27$ 
  - a. Solve by square roots.
  - b. Are the solutions rational, irrational, or complex?
  - c. Could the equation be solved by factoring? Explain.
  - d. How many real solutions exist?

**Assessment Title: Square Root Scoot**  
**Unit 3: Quadratic Functions: Working with Equations**

**Station 2:**

1.  $0 = x^2 - 9$

- a. Solve by square roots.
- b. Are the solutions rational, irrational, or complex?
- c. Could the equation be solved by factoring? Explain.
- d. How many real solutions exist?

2.  $0 = x^2 + 5$

- a. Solve by square roots.
- b. Are the solutions rational, irrational, or complex?
- c. Could the equation be solved by factoring? Explain.
- d. How many real solutions exist?

3.  $0 = 3x^2 - 27$

- a. Solve by square roots.
- b. Are the solutions rational, irrational, or complex?
- c. Could the equation be solved by factoring? Explain.
- d. How many real solutions exist?

4.  $0 = x^2 + 4$

- a. Solve by square roots.
- b. Are the solutions rational, irrational, or complex?
- c. Could the equation be solved by factoring? Explain.
- d. How many real solutions exist?

5.  $0 = -x^2 - 27$

- a. Solve by square roots.
- b. Are the solutions rational, irrational, or complex?
- c. Could the equation be solved by factoring? Explain.
- d. How many real solutions exist?

**Assessment Title: Square Root Scoot**  
**Unit 3: Quadratic Functions: Working with Equations**

**Station 3:**

1.  $0 = 4x^2 - 9$ 
  - a. Solve by square roots.
  - b. Are the solutions rational, irrational, or complex?
  - c. Could the equation be solved by factoring? Explain.
  - d. How many real solutions exist?
  
2.  $0 = 16x^2$ 
  - a. Solve by square roots.
  - b. Are the solutions rational, irrational, or complex?
  - c. Could the equation be solved by factoring? Explain.
  - d. How many real solutions exist?
  
3.  $0 = 2x^2 + 32$ 
  - a. Solve by square roots.
  - b. Are the solutions rational, irrational, or complex?
  - c. Could the equation be solved by factoring? Explain.
  - d. How many real solutions exist?
  
4.  $0 = x^2 + 6$ 
  - a. Solve by square roots.
  - b. Are the solutions rational, irrational, or complex?
  - c. Could the equation be solved by factoring? Explain.
  - d. How many real solutions exist?
  
5.  $0 = x^2 - 81$ 
  - a. Solve by square roots.
  - b. Are the solutions rational, irrational, or complex?
  - c. Could the equation be solved by factoring? Explain.
  - d. How many real solutions exist?

**Assessment Title: Square Root Scoot**  
**Unit 3: Quadratic Functions: Working with Equations**

**Station 4:**

1.  $0 = 2x^2 - 200$ 
  - a. Solve by square roots.
  - b. Are the solutions rational, irrational, or complex?
  - c. Could the equation be solved by factoring? Explain.
  - d. How many real solutions exist?
  
2.  $0 = x^2 - 25$ 
  - a. Solve by square roots.
  - b. Are the solutions rational, irrational, or complex?
  - c. Could the equation be solved by factoring? Explain.
  - d. How many real solutions exist?
  
3.  $0 = x^2 + 25$ 
  - a. Solve by square roots.
  - b. Are the solutions rational, irrational, or complex?
  - c. Could the equation be solved by factoring? Explain.
  - d. How many real solutions exist?
  
4.  $0 = -x^2 + 3$ 
  - a. Solve by square roots.
  - b. Are the solutions rational, irrational, or complex?
  - c. Could the equation be solved by factoring? Explain.
  - d. How many real solutions exist?
  
5.  $0 = x^2 - 24$ 
  - a. Solve by square roots.
  - b. Are the solutions rational, irrational, or complex?
  - c. Could the equation be solved by factoring? Explain.
  - d. How many real solutions exist?

**Assessment Title: Square Root Scoot**  
**Unit 3: Quadratic Functions: Working with Equations**

**Station 5:**

1.  $0 = 4x^2 - 25$ 
  - a. Solve by square roots.
  - b. Are the solutions rational, irrational, or complex?
  - c. Could the equation be solved by factoring? Explain.
  - d. How many real solutions exist?
  
2.  $0 = -5x^2$ 
  - a. Solve by square roots.
  - b. Are the solutions rational, irrational, or complex?
  - c. Could the equation be solved by factoring? Explain.
  - d. How many real solutions exist?
  
3.  $0 = -3x^2 + 81$ 
  - a. Solve by square roots.
  - b. Are the solutions rational, irrational, or complex?
  - c. Could the equation be solved by factoring? Explain.
  - d. How many real solutions exist?
  
4.  $0 = 2x^2 - 36$ 
  - a. Solve by square roots.
  - b. Are the solutions rational, irrational, or complex?
  - c. Could the equation be solved by factoring? Explain.
  - d. How many real solutions exist?
  
5.  $0 = x^2 - 18$ 
  - a. Solve by square roots.
  - b. Are the solutions rational, irrational, or complex?
  - c. Could the equation be solved by factoring? Explain.
  - d. How many real solutions exist?

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**Answer Key****Station 1:**

1.  $0 = x^2 + 9$

- a. Solve by square roots.  $x = \pm 3i$
- b. Are the solutions rational, irrational, or complex? **complex**
- c. Could the equation be solved by factoring? Explain. **No, solutions are not rational.**
- d. How many real solutions exist? **0**

2.  $0 = x^2$

- a. Solve by square roots.  $x = 0$
- b. Are the solutions rational, irrational, or complex? **rational**
- c. Could the equation be solved by factoring? Explain. **Yes, solutions are rational.**
- d. How many real solutions exist? **1**

3.  $0 = 2x^2 - 8$

- a. Solve by square roots.  $x = \pm 2$
- b. Are the solutions rational, irrational, or complex? **rational**
- c. Could the equation be solved by factoring? Explain. **Yes, solutions are rational.**
- d. How many real solutions exist? **2**

4.  $0 = x^2 - 4$

- a. Solve by square roots.  $x = \pm 2$
- b. Are the solutions rational, irrational, or complex? **rational**
- c. Could the equation be solved by factoring? Explain. **Yes, solutions are rational.**
- d. How many real solutions exist? **2**

5.  $0 = x^2 - 27$

- a. Solve by square roots.  $x = \pm 3\sqrt{3}$
- b. Are the solutions rational, irrational, or complex? **irrational**
- c. Could the equation be solved by factoring? Explain. **No, solutions are not rational.**
- d. How many real solutions exist? **0**

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**Unit 3: Quadratic Functions: Working with Equations**

**Station 2:**

1.  $0 = x^2 - 9$
- a. Solve by square roots.  $x = \pm 3$
  - b. Are the solutions rational, irrational, or complex? **rational**
  - c. Could the equation be solved by factoring? Explain. **Yes, the solutions are rational.**
  - d. How many real solutions exist? **2**
2.  $0 = x^2 + 5$
- a. Solve by square roots.  $x = \pm i\sqrt{5}$
  - b. Are the solutions rational, irrational, or complex? **complex**
  - c. Could the equation be solved by factoring? Explain. **No, solutions are not rational.**
  - d. How many real solutions exist? **0**
3.  $0 = 3x^2 - 27$
- a. Solve by square roots.  $x = \pm 3$
  - b. Are the solutions rational, irrational, or complex? **rational**
  - c. Could the equation be solved by factoring? Explain. **Yes, solutions are rational.**
  - d. How many real solutions exist? **2**
4.  $0 = x^2 + 4$
- a. Solve by square roots.  $x = \pm 2i$
  - b. Are the solutions rational, irrational, or complex? **complex**
  - c. Could the equation be solved by factoring? Explain. **No, solutions are not rational.**
  - d. How many real solutions exist? **0**
5.  $0 = -x^2 - 27$
- a. Solve by square roots.  $x = \pm 3i\sqrt{3}$
  - b. Are the solutions rational, irrational, or complex? **complex**
  - c. Could the equation be solved by factoring? Explain. **No, solutions are not rational.**
  - d. How many real solutions exist? **0**



**Assessment Title: Square Root Scoot**  
**Unit 3: Quadratic Functions: Working with Equations**

**Station 3:**

1.  $0 = 4x^2 - 9$
- Solve by square roots.  $x = \pm \frac{3}{2}$
  - Are the solutions rational, irrational, or complex? **rational**
  - Could the equation be solved by factoring? Explain. **Yes, solutions are rational.**
  - How many real solutions exist? **2**
2.  $0 = 16x^2$
- Solve by square roots.  $x = 0$
  - Are the solutions rational, irrational, or complex? **rational**
  - Could the equation be solved by factoring? Explain. **Yes, solutions are rational.**
  - How many real solutions exist? **1**
3.  $0 = 2x^2 + 32$
- Solve by square roots.  $x = \pm 4i$
  - Are the solutions rational, irrational, or complex? **complex**
  - Could the equation be solved by factoring? Explain. **No, solutions are not rational.**
  - How many real solutions exist? **0**
4.  $0 = x^2 + 6$
- Solve by square roots.  $x = \pm i\sqrt{6}$
  - Are the solutions rational, irrational, or complex? **complex**
  - Could the equation be solved by factoring? Explain. **No, solutions are not rational.**
  - How many real solutions exist? **0**
5.  $0 = x^2 - 81$
- Solve by square roots.  $x = \pm 9$
  - Are the solutions rational, irrational, or complex? **rational**
  - Could the equation be solved by factoring? Explain. **Yes, solutions are rational.**
  - How many real solutions exist? **2**

**Assessment Title: Square Root Scoot**  
**Unit 3: Quadratic Functions: Working with Equations**

**Station 4:**

1.  $0 = 2x^2 - 200$

- a. Solve by square roots.  $x = \pm 10$
- b. Are the solutions rational, irrational, or complex? **rational**
- c. Could the equation be solved by factoring? Explain. **Yes, solutions are rational.**
- d. How many real solutions exist? **2**

2.  $0 = x^2 - 25$

- a. Solve by square roots.  $x = \pm 5$
- b. Are the solutions rational, irrational, or complex? **rational**
- c. Could the equation be solved by factoring? Explain. **Yes, solutions are rational.**
- d. How many real solutions exist? **2**

3.  $0 = x^2 + 25$

- a. Solve by square roots.  $x = \pm 5i$
- b. Are the solutions rational, irrational, or complex? **complex**
- c. Could the equation be solved by factoring? Explain. **No, solutions are not rational.**
- d. How many real solutions exist? **0**

4.  $0 = -x^2 + 3$

- a. Solve by square roots.  $x = \pm i\sqrt{3}$
- b. Are the solutions rational, irrational, or complex? **complex**
- c. Could the equation be solved by factoring? Explain. **No, solutions are not rational.**
- d. How many real solutions exist? **0**

5.  $0 = x^2 - 24$

- a. Solve by square roots.  $x = \pm 2\sqrt{6}$
- b. Are the solutions rational, irrational, or complex? **irrational**
- c. Could the equation be solved by factoring? Explain. **No, solutions are not rational.**
- d. How many real solutions exist? **2**

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**Station 5:**

1.  $0 = 4x^2 - 25$

- a. Solve by square roots.  $x = \pm \frac{5}{2}$
- b. Are the solutions rational, irrational, or complex? **rational**
- c. Could the equation be solved by factoring? Explain. **Yes, solutions are rational.**
- d. How many real solutions exist? **2**

2.  $0 = -5x^2$

- a. Solve by square roots.  $x = 0$
- b. Are the solutions rational, irrational, or complex? **rational**
- c. Could the equation be solved by factoring? Explain. **Yes, solution is rational.**
- d. How many real solutions exist? **1**

3.  $0 = -3x^2 + 81$

- a. Solve by square roots.  $x = \pm 3\sqrt{3}$
- b. Are the solutions rational, irrational, or complex? **irrational**
- c. Could the equation be solved by factoring? Explain. **No, solutions are not rational.**
- d. How many real solutions exist? **2**

4.  $0 = 2x^2 - 36$

- a. Solve by square roots.  $x = \pm 3\sqrt{2}$
- b. Are the solutions rational, irrational, or complex? **irrational**
- c. Could the equation be solved by factoring? Explain. **No, solutions are not rational.**
- d. How many real solutions exist? **2**

5.  $0 = x^2 - 18$

- a. Solve by square roots.  $x = \pm 3\sqrt{2}$
- b. Are the solutions rational, irrational, or complex? **irrational**
- c. Could the equation be solved by factoring? Explain. **No, solutions are not rational.**
- d. How many real solutions exist? **2**