Answer Key · Lesson 6.5: Solving Radical Equations

School Launch · Algebra II · Unit 6 · Worksheet A · for the parent

Key

1. $x = 15$

Solve: $\sqrt{x + 1} = 4$.

2. $x = 7$

Solve: $\sqrt{x + 2} = 3$.

3. $x = 23$

Solve: $\sqrt{x + 2} = 5$.

4. $x = 21$

1. Square both sides: $x + 4 = 25$
2. Check: $x = 21$ works

Solve: $\sqrt{x + 4} = 5$.

5. $x = 13$

1. Square both sides: $x + 3 = 16$
2. Check: $x = 13$ works

Solve: $\sqrt{x + 3} = 4$.

6. $x = -2$

1. Square both sides: $x + 3 = 1$
2. Check: $x = -2$ works

Solve: $\sqrt{x + 3} = 1$.

7. $x = 35$

1. Square both sides: $x + 1 = 36$
2. Check: $x = 35$ works

Solve: $\sqrt{x + 1} = 6$.

8. $x = 4, 5$

1. Square both sides: $x - 4 = x^{2} - 8x + 16$
2. Solve: $x = 4,\ x = 5$
3. Check: $x = 4$ works, $x = 5$ works

Solve and check for extraneous roots: $\sqrt{x - 4} = x - 4$.

9. $x = 8$

1. Square both sides: $x + 1 = x^{2} - 10x + 25$
2. Solve: $x = 3,\ x = 8$
3. Check: $x = 8$ works; $x = 3$ is extraneous

Solve and check for extraneous roots: $\sqrt{x + 1} = x - 5$.

10. $x = 3$

1. Square both sides: $x + 1 = x^{2} - 2x + 1$
2. Solve: $x = 0,\ x = 3$
3. Check: $x = 3$ works; $x = 0$ is extraneous

Solve and check for extraneous roots: $\sqrt{x + 1} = x - 1$.