

Solving Square Root Equations (pp. 1 of 2)

$$48 = \sqrt{18d}$$

$$48^2 = (\sqrt{18d})^2$$

$$2304 = 18d$$

$$\frac{2304}{18} = \frac{18d}{18}$$

$$128 = d$$

$$48 \stackrel{?}{=} \sqrt{18(128)}$$

$$48 \stackrel{?}{=} \sqrt{2304}$$

$$48 = 48$$

How can this equation be solved algebraically?

- 1) Isolate the radical
- 2) Square both sides
- 3) Simplify and solve

- 4) Check the solutions

$$5 + \sqrt{(x-3)} = 9$$

Square Root Equation

- 1) Isolate the radical
- 2) Square both sides
- 3) Simplify and Solve

$$\sqrt{x+5} - 3 = x$$

- 4) Check the solutions

Solve each equation.

A) $2\sqrt{x+7} + 3 = 15$

B) $x = \sqrt{x+20}$

C) $\sqrt{4x-3} - 10 = -3$

Solving Square Root Equations (pp. 2 of 2)

Solve each square root equation. Remember to check your solutions.

1. $\sqrt{3x+1} = 8$

2. $\sqrt{2x+3} = 5$

3. $\sqrt{x^2 - 9} = 4$

4. $\sqrt{x-1} + 3 = x$

5. $5\sqrt{x-1} = \sqrt{x+1}$

6. $\sqrt{-3x+6} = x+4$

CHALLENGE: In this equation, you must isolate the radical and square both sides TWICE.

$$\sqrt{x-5} = \sqrt{x}-1$$