

4.3: Solving Quadratic Equations by Completing the Square

A quadratic function in vertex form can be solved algebraically:

**When applying a square root to both sides of the equation, there are two possible answers:

For example:

$$x^2 = 9$$

Example 1: Solve by completing the square: Leave answers in exact form:

a.) $(x - 4)^2 - 5 = 0$

b.) $(x + 5)^2 - 12 = 0$

c.) $x^2 - 21 = 10x$

d.) $x^2 + 4x = 11$

Example 2: Solve by completing the square: Leave answers to two decimal

Check with the graphing calculator.

a.) $-2x^2 - 3x + 7 = 0$

b.) $-2x^2 + 5x + 2$

Example 3:

A 50" TV (measured across the diagonal) has a height that is 16" shorter than its width. Determine the dimension of the TV by completing the square.

