

SC Algebra 1
11.4 - Solving Quadratic Equations by Factoring

Warm Up:

Determine if each polynomial is factorable. If so, factor it.

1. $x^2 - 4x - 2$

2. $x^2 + 3x - 88$

3. $x^2 - 4x - 32$

4. $x^2 - 9$

How can I meet today's standards?

*I can **use the square root property and factoring** to solve quadratic equations*

Speak Like A Mathematician:

zeroes/roots/solutions of a quadratic function: these terms mean the _____ thing: the _____ of a quadratic function.

Example 1: Use the Square Root Property

Solve the following equations.

$x^2 = 49$	$(y - 4)^2 = 56$
$x^2 - 25 = 0$	$(y + 5)^2 = 21$
$(x - 3)^2 = 64$	$(x + 6)^2 = 81$

Example 2: Solve an Equation by Using Square Roots

During the Egg Drop Competition at Anika's school, students must create a container for an egg that prevents the egg from breaking when dropped from a height of 30 feet. The formula $h = -16t^2 + h_0$ can be used to approximate the number seconds t it takes for the container to reach height h from an initial height of h_0 in feet. Find the time it takes the container to reach the ground.

Key Concept: Zero Product Property

If the _____ of two factors is _____, then at least one of the factors _____ be zero.

Example 3: Solving a Quadratic Equation by Factoring

Solve.

$4x^2 - 12x = 0$	$x^2 + 12x + 27 = 0$
$x^2 - 3x - 10 = 0$	$2x^2 + 5x = 12$
$x^2 - 9x + 14 = 0$	$2x^2 - 5x = 3$