

# Quadratics

Solving

Factor Completely:

$$x^2 - 17x + 60$$

$$x^2 + 14x + 40$$

$$9x^2 - 100$$

$$3x^2 - 4x - 7$$

$$2x^2 - 34x + 60$$

$$6x^2 - 2x - 4$$

Solve by Factoring:

$$x^2 + 19x + 60 = 0$$

$$x^2 + 3x = 54$$

$$2x^2 + 19x = -24$$

$$4x^2 + 3 = 8x$$

Find the value of the discriminant. Find the number of real or imaginary solutions. If the solutions are real classify them as rational or irrational.

$$3x^2 + 14x - 5 = 0$$

$$9x^2 - 6x + 1 = 0$$

$$x^2 + 6x + 10 = 0$$

$$2x^2 + 3x - 1 = 0$$

Solve using the quadratic formula. Classify each solution as rational, irrational, or complex. When possible make sure you simplify your radicals.

$$2x^2 - 6x = 5$$

$$x^2 + 35 = 2x$$

$$x^2 - 2x - 4 = -3$$

$$-2x^2 + 10 = -x$$

Solve each quadratic by which ever method you chose. Make sure to simplify all radicals.

$$3x^2 + 11x = 4$$

$$3x^2 + 8x + 2 = 0$$

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

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

Perform the indicated operation:

$$-1 - 8i - 4 - i$$

$$-3 + 6i - (-5 - 3i) - 8i$$

$$4i(-2 - 8i)$$

$$(4 - 5i)(4 + i)$$

$$(-2 - i)(4 + i) + (2 - 4i)(-6 + i)$$

During a chemistry experiment, the cork in a 0.5 feet tall beaker with an effervescent solution pops off with an initial velocity of 20 feet per second. How many seconds does it take for the cork to hit the table.