

Write the 3 forms of a quadratic and what can be found easily from each form.

Given the quadratic, $ax^2 + bx + c = 0$, what is the quadratic formula

$x =$

or $x =$

What is meant by solving a quadratic equation?

Factor completely

$$x^2 + 8x + 15$$

$$x^2 - 4x - 21$$

$$2x^2 - 4x - 96$$

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

Solve the equation by factoring

$$x^2 + 9x + 20 = 0$$

$$x^2 - 3x = 40$$

$$2x^2 - 24x + 72 = 0$$

Simplify each radical. Give exact values. (No decimals)

$$\sqrt{8}$$

$$\sqrt{180}$$

$$\frac{\sqrt{252}}{\sqrt{7}}$$

Solve using the quadratic formula. Be sure to simplify all radicals. If the solution is complex leave the form of $a \pm bi$.

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

$$5x^2 - 9x + 4 = 0$$

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

Solve by any method

$$x^2 - 7x - 18 = 0$$

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

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

Perform the indicated operation. Make sure your answer is in standard form.

$$3 + 2i - 6 + 7i$$

$$1 - 4i - (3 - 8i)$$

$$(2 - 5i)(1 + 4i)$$

Write the equation of the quadratic function with the given information

X-intercepts $(-4, 0)$ and $(3, 0)$ and has a y-intercept of 36.

Nolan and Rodger are throwing snowballs into a parking lot from their balcony that is 144 feet above ground. Nolan is throwing snowballs with an upward velocity of 128 feet per second. Rodger is simply dropping his snowballs over the balcony edge.

- a. Write a function rule that will represent the height from the ground as a function of time for a Nolan thrown snowball.

- b. Find the height of a Nolan thrown snowball at 3 seconds? Show your work.

- c. Find the height of a Nolan thrown snowball at 7 seconds? Show your work.

d. When does a Nolan thrown snowball hit the ground?

e. Find the maximum height of a Nolan thrown snowball. What time does this happen?

- g. Write a function rule that will represent the height from the ground as a function of time for a Rodger dropped snowball.

- h. When does a Rodger dropped snowball hit the ground?

- i. How much longer is does it take for a Nolan thrown snowball to hit the ground than a Rodger dropped snowball?