Using the Quadratic Equation

Mar 11-1:00 PM

Do Now

1. $x^2-6x+9=0$
2. $2x^2+18=0$
3. $s^2-s-6=0$
4. $2x^2-9x-18=0$

Mar 11-11:32 AM

The Quadratic Formula

$$x = \frac{-b \pm \sqrt{b^2-4ac}}{2a}$$

The equation must be in the form of $ax^2 + bx + c = 0, a \neq 0$

Make sure that the equation is in exponential, alphabetical order

Mar 11-11:42 AM

$$x = \frac{-b \pm \sqrt{b^2-4ac}}{2a}$$

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

1. $x = \frac{-5 \pm \sqrt{(5)^2 - 4(2)(3)}}{2(2)}$ ← Replace a, b, and c with the correct values
2. $x = \frac{-5 \pm \sqrt{25-24}}{4}$ ← Use PEMDAS to evaluate the equation
3. $x = \frac{-5 \pm \sqrt{1}}{4}$
4. $x = \frac{-5 + 1}{4}$ $x = \frac{-5 - 1}{4}$ ← Split the equation into two seperate equations one addition and one subtraction
5. $x = -1$ $x = \frac{-3}{2}$ ← You should have two answers to a quadratic equation question

Mar 11-12:07 PM

Don't forget that you must make sure the equation is in the form of $ax^2 + bx + c = 0$

1. $t^2 - t - 1 = 0$
2. $2x^2 = 12 - 5x$
3. $y^2 - 2y = 17$
4. $6y^2 - 5y = 4$

Mar 11-12:38 PM

5. $2p^2 - 8p + 5 = 0$
6. $3y^2 = 6y - 2$
7. $s^2 - 4s + 13 = 0$
8. $2r^2 = 4r - 11$

Mar 11-12:54 PM

Real World Apps:

$h = -16t^2 + vt + c$

v = initial upward velocity
c = the starting height
h = 0 for the when it lands on the ground

Suppose a football player kicks a ball and gives it an initial upward velocity of 47ft/sec. The starting height is 3ft. If no one catches the football, how long will it be in the air?

Mar 26-12:40 PM

A child throws a ball upward with an initial upward velocity of 15ft/s from a height of 2 ft. If no one catches the ball, how long will it be in the air?

Apr 11-2:44 PM