

Warm-up:

Nov. 9, 2017

Q The quadratic formula was used by a student to solve the equation $x^2 + x - 12 = 0$ as shown below. Identify and correct the error in the following:.]

Step 1 $x = \frac{-1 \pm \sqrt{1^2 - 4(1)(-12)}}{2(1)}$

Step 2 $x = \frac{-1 \pm \sqrt{49}}{2}$

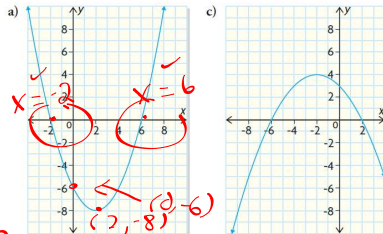
Step 3 $x = \frac{-1 \pm 7}{2}$

~~Step 4~~ $x = -1 \pm \frac{7}{2}$
 -1 ± 3.5

$\frac{-1+7}{2}$ $\frac{-1-7}{2}$
3 -4

Nov 13-8:04 AM

11. Determine the equation of the quadratic function that defines each parabola. Use the discriminant to prove the zero's:

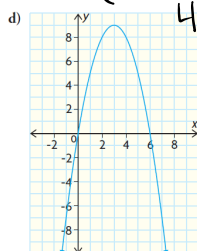
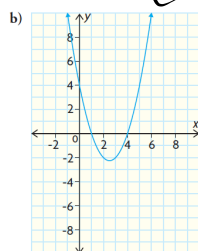


$f(x) = a(x+2)(x-6)$
 $-6 = a(0+2)(0-6)$
 $-6 = a(2)(-6)$
 $-6 = a(-12)$
 $\frac{-6}{-12} = \frac{a}{-12}$
 $a = \frac{1}{2}$

$y = \frac{1}{2}(x+2)(x-6)$

$y = \frac{1}{2}(x^2 - 4x - 12)$
 $y = \frac{1}{2}x^2 - 2x - 6$

$D: b^2 - 4ac$
 $(-2)^2 - 4(\frac{1}{2})(-6)$
 $4 + (+12)$
 $= 16 > 0$



Oct 23-8:12 AM

Nov. 9, 2017

A hunter fires a bullet into the air from his lookout stand in a tree at a partridge flying above him. The trajectory of the bullet is represented by the equation $y = -2.5x^2 + 20x + 15$, where x is the time in seconds and y is the height in meters.

a) What is the maximum height reached by the bullet?
 Vertex $(4, 55)$: 55m
 Max

b) How long did it take to reach the maximum height?
 4 sec

c) At what height was the hunter above the ground when he fired his gun? How do you know?
 15m \rightarrow y-int
 $x=0$

d) How long did it take for the bullet to hit the ground? How do you know?
 $t = 9.7 \text{ sec}$
 $x\text{-int/zero}$

$D: \{x \mid 0 \leq x \leq 8.7, x \in \mathbb{R}\}$
 $R: \{y \mid 0 \leq y \leq 55, y \in \mathbb{R}\}$

Oct 4-1:37 PM