

FoM11 Lesson 7.3

Monday, May 29, 2017 12:51 PM

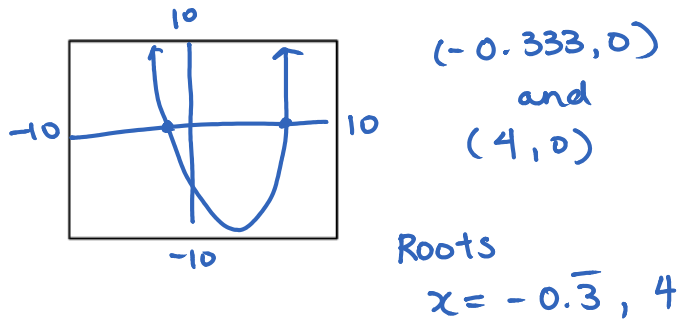
FOM11

7.3 Solving Quadratic Equations by Graphing

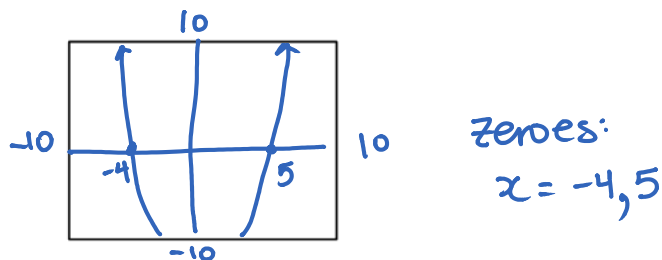
A quadratic function is of the form $y = ax^2 + bx + c$. To solve a quadratic function means to find the x-intercepts, called the zeroes.

A quadratic equation is of the form $ax^2 + bx + c = 0$. To solve a quadratic equations means to find the x-intercepts, called the roots.

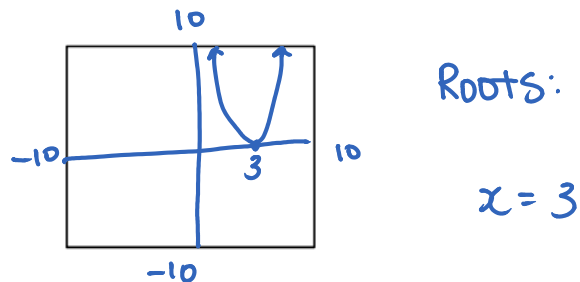
Example 1: Solve $3x^2 - 11x - 4 = 0$ using graphing. (ie. Find the roots.)



Example 2: Find the zeroes for $y = x^2 - x - 20$.



Example 3: What are the roots for $x^2 - 6x + 9 = 0$?



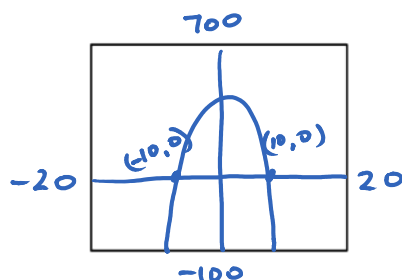
Example 4: The manager at Suzie's Fashion Store has determined that the function $R(x) = 600 - 6x^2$ models the expected weekly revenue, R , in dollars, from sweatshirts as the price changes, where x is the change in price, in dollars. What price increase or decrease will result in no revenue?

No revenue

means

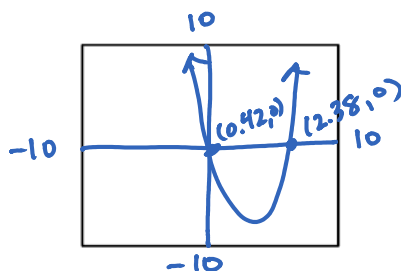
$$R(x) = 0$$

$$0 = 600 - 6x^2$$



A price increase of \$10 (+10) or a price decrease \$10 (-10) will result in no revenue.

Example 5: Solve $3x^2 - 6x + 5 = 2x(4 - x)$ by graphing. *Goal - Make one side = 0*



$$3x^2 - 6x + 5 = 2x(4 - x)$$

$$3x^2 - 6x + 5 = 8x - 2x^2$$

$$5x^2 - 6x + 5 = 8x$$

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

$$x = 0.42, 2.38$$

Example 6: Lamont runs a boarding kennel for dogs. He wants to construct a rectangular play space for the dogs, using 40 m of fencing and an existing wall as one side of the play space.

- Write a function that describes the area, A , of the play space in terms of any width, w .
- Determine the number of possible widths for an area of:
 - 250 m^2
 - 200 m^2
 - 150 m^2

Assignment: ~~pg 379 #5-7, 10-12~~

HW p.379 #4-7