

Warm up

Solve using the quadratic formula.

(Determine the roots of each equation)

1) $4x^2 + 4x + 1 = 0$

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

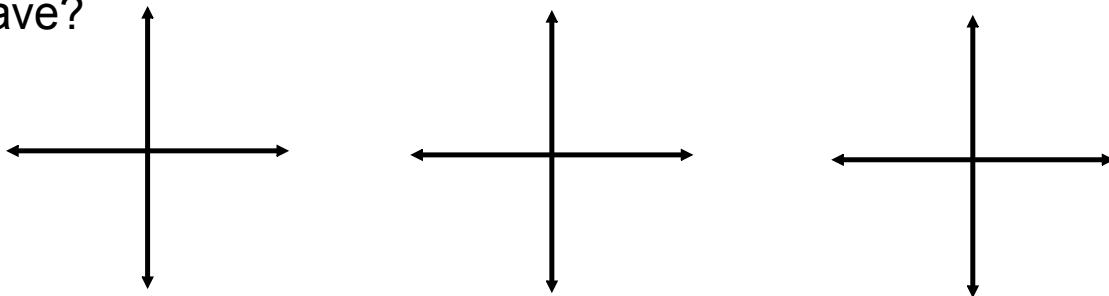
MCF 3MI

Unit 4 - Standard and Vertex Form

Day 7 - Nature of the Roots

Nature of the Roots

How many x-intercepts (zeros) can a quadratic function have?



How many solutions can a quadratic equation have?

The discriminant:

Allows you to see the number of roots/x-intercepts/zeros without having to graph or use the whole quadratic formula.

Example: Determine the number of roots for each of the following equations.

1) $x^2 - 5x - 11 = 0$

2) $3x^2 - 4x = -6$

3) $9x^2 - 60x + 100 = 0$

4) $2(x - 1)^2 + 3 = 0$

Example:

For what values of k does the equation $2x^2 - 8x + k = 0$ have 2 roots? 1 root? no roots?

pg 232 # 2, 4 - 7, 12