

4.5 Day 2

Discriminant: tells the number of real solutions for the quadratic equation

Quadratic Formula:

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

Discriminant:

$$b^2 - 4ac$$

Value of discriminant	Number of real solutions (zeros)
$b^2 - 4ac > 0$ (positive)	Two real solutions
$b^2 - 4ac = 0$	One solution
$b^2 - 4ac < 0$ (negative)	No real solutions

Try it... How many real solutions does the quadratic equation have?

a) $0 = 5x^2 - 10x + 8$
 $= 10^2 - 4(5)(8)$
 $= -60$

No real solutions

b) $5 = 4x^2 + 5x + 6$
 $-5 \quad -5$

$$4x^2 + 5x + 1$$

$$5^2 - 4(4 \cdot 1) = 9$$

Two Real Solutions

c) $-8x^2 - 8x + 8 = 10$
 $-10 \quad -10$

$$-3x^2 - 8x - 2 = 0$$

$$-8^2 - 4(-3)(-2)$$

$$64 - 64 = 0$$

1 real solution