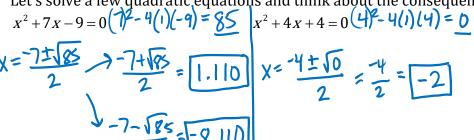
Unit 8 Day 12 Notes on Quadratics Formula and Discriminant

Let's solve a few quadratic equations and think about the consequences



 $x^2 + 4x + 6 = 0$ (4) $^2 - 4(1)(6) = -8$

Let's compare the number of solutions:

2 solutions

Solution

No solution

Why?

10

Inegative

What mattered was $b^2 - 4ac$ We call this the



Determine the value of the discriminant and state what that means in terms of the number of solutions the equation has

$$d = (-b)^{2} - 4(1)(9)$$

$$d = 0$$

$$d = 0$$

$$x^{2}-6x-8=0$$
 $d=(-6)^{2}-4(1)[-8]$
 $d=68$
2 solutions

$$d = (-b)^{2} - 4(1)(12)$$

$$d = -12$$

$$\sqrt{b} = \sqrt{b} = \sqrt{b}$$

Summary:

$$b^2-4ac>0$$

| solution

One more thing.

If the discriminant is a perfect square: $b^2-4ac = perfect square (1,4,9,1b,25,3b,...)$

the the solutions will be rational so it would be factorable

