

## 4.6 Notes Day 2

When using the Quadratic Formula, if the value of the radical is negative, the solutions will be complex. Complex solutions always appear in conjugate pairs.

Solve using the Quadratic Formula:

$$f(x) = x^2 - 4x + 13$$

$$f(x) = x^2 - 6x + 10$$

$$f(x) = 3x^2 + 5x + 4$$

$$f(x) = x^2 + 2x + 4$$

Discriminant:  $b^2 - 4ac$

Tells you the number of solutions and the nature of your solutions.

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

Ex: Find the type and number of solutions for each function:

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

$$f(x) = x^2 - 6x + 11$$

$$f(x) = x^2 + 6x + 9$$

Use the discriminant to identify the type and number of solutions. If the solutions will be rational, find the solutions of the quadratic function.

$$22x = 12x^2 + 6$$

$$12x^2 + 9x - 2 = -17$$