

## Notes #26 ~ Sect. 5.8: Quadratic Formula

Standard Form of a Quadratic Equation:  $ax^2 + bx + c = 0$

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

Ex. 1: Solve using the Quadratic Formula.

a)  $3x^2 + 23x + 40 = 0$

$$\text{b) } 3x^2 + 2x = -4$$

Discriminant:  $b^2 - 4ac$

Value of the Discriminant:	Type & Number of Solutions:
$b^2 - 4ac < 0$	two imaginary solutions
$b^2 - 4ac = 0$	one real solution
$b^2 - 4ac > 0$	two real solutions

Ex. 1: Evaluate the discriminant of each equation. Tell how many solutions each equation has and whether the solutions are real or imaginary.

a)  $x^2 + 5x + 10 = 0$

b)  $x^2 + 6x + 9 = 0$