Algebra 2 **Name**_____
Notes: 3.4 **Date**_____ **Block**_____

Core Concept – The Quadratic Formula

Let a, b, and c be real numbers such that $a \neq 0$. The solutions of the quadratic equation

$ax^2 + bx + c = 0$ are :

Example: Solve $x^2 + 3x = 5$ using the Quadratic Formula.

Solve the equation using the Quadratic Formula.

1. $x^2 - 6x + 4 = 0$
2. $2x^2 + 4 = -7x$
3. $5x^2 = x + 8$

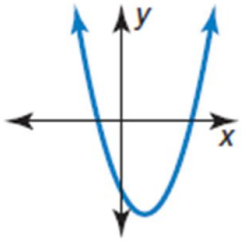
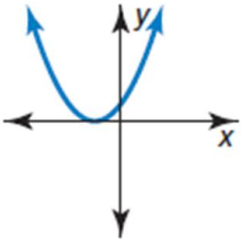
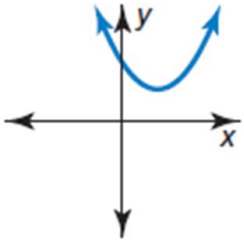
Example: Solve $25x^2 - 8x = 12x - 4$ using the Quadratic Formula.

Example: Solve $-x^2 + 4x = 13$ using the Quadratic Formula.

Solve the equation using the Quadratic Formula.

4. $x^2 + 41 = -8x$
5. $-9x^2 = 30x + 25$
6. $5x - 7x^2 = 3x + 4$

Core Concept – Analyzing the Discriminant of $ax^2 + bx + c = 0$

Value of discriminant			
Number and type if solutions			
Graph of $y = ax^2 + bx + c$	 Two x-intercepts	 One x-intercept	 No x-intercept

Find the discriminant of the quadratic equation and describe the number and type of solutions of the equation.

a. $x^2 - 6x + 10 = 0$ b. $x^2 - 6x + 9 = 0$ c. $x^2 - 6x + 8 = 0$

Find the discriminant of the quadratic equation and describe the number and type of solutions of the equation.

7. $4x^2 + 8x + 4 = 0$

8. $x^2 + x - 1 = 0$

9. $5x^2 = 8x - 13$

10. $7x^2 - 3x = 6$

11. $4x^2 + 6x = -9$

12. $-5x^2 + 1 = 6 - 10x$