SECTION 3.4: THE QUADRATIC FORMULA

Homework: _____

Learning Targets:

3a. Understanding of how to solve quadratic equations using graphs, factoring, completing the square, and the Quadratic Formula.

Quadratic Formula Song

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

"Opposite of b" (repeat)

"Plus or minus square root" (repeat)

"B squared minus 4ac" (repeat)

"All over 2a" (repeat)

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

Discriminant: _____

2 Real Solutions **1 Real Solution** **No Real Solutions**

$x^2 - 4x = 5$

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

Problems for Left Page

Examples: Solve each equation by using the quadratic formula

1. $2x^2 + 3x - 20 = 0$ $x = \frac{5}{2}, x = -4$
2. $2x^2 - 7x - 13 = -10$ $x = \frac{7 \pm \sqrt{73}}{4}$
3. $-6x^2 + 3x + 2 = 3$ $x = \frac{1}{4} \pm \frac{\sqrt{15}}{12} i$

Determine the type of solution(s) by calculating the determinant.

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

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