Lesson 4.9 Warm Up (Clickers

1. Solve using the quadratic formula:

$-2x^2 + 6x - 8 = 3x$

2. Solve using completing the square:

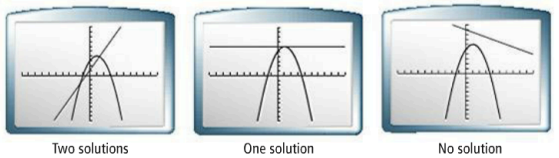
$x^2 - 8x + 2 = -8$

Lesson 4.9 Quadratic Systems

Essential Understanding: You can solve systems involving quadratic equations using methods similar to the ones used to solve systems of linear equations.

Key Concept Solutions of a Linear-Quadratic System

A system of one quadratic equation and one linear equation can have two solutions, one solution, or no solution.



Two solutions | One solution | No solution

Solving systems using substitution:

Ex. What is the solution of the system of equations:

$y = -x^2 - x + 6$

$y = x + 3$

Ex. Solve: $y = -x^2 - 3x + 10$

$y = x + 5$

1 Solve the system:

$y = x^2 - 2x + 1$

y = x - 3

2 Solve the system:

$y = x^2 - 4x + 5$

$y = -x^2 + 5$

Solving systems by graphing (calculators):

Step 1: Graph each equation

Step 2: 2nd Calc

Step 3: Intersect

Step 4: Find the intersection of all intersecting points.

Ex. Solve by graphing:

$y = -x^2 - x + 12$

$y = x^2 + 7x + 12$

3 Solve by graphing (round answers to the nearest hundredth, if needed):

$y = -2x^2 - x + 5$

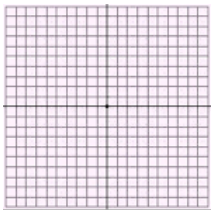
$y = x^2 - 3x - 3$

Solving systems of inequalities:

Ex. What is the solution of the system:

$y > x^2 - 2$

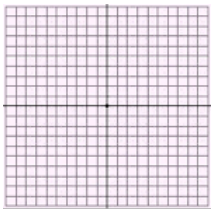
$y < -x^2 - 9x - 2$



Ex. What is the solution of the system:

$y \leq -x^2 - 4x + 3$

$y > x^2 + 3$



*How many solutions can a system of quadratic inequalities have?