

Name: _____ Hour: _____ Date: _____

NOTES: Section 4.9 – Graph and Solve Quadratic Inequalities

Goals: #1 - I can graph quadratic inequalities.



#2 - I can graph systems of quadratic inequalities.

Homework: Lesson 4.9 Worksheet

Warm Up:

1. Use the quadratic formula to solve $-x^2 + 8x = 20$
2. Find the discriminant of $2x^2 + 3x - 6 = 0$ and give the number and type of solutions to the equation.
3. An object is thrown upward from a height of 15 feet at an initial velocity of 35 feet per second. How long will it take for the object to hit the ground?

Review:

The two differences between graphing _____ and graphing _____ are:

-
-

This is the same for graphing _____.

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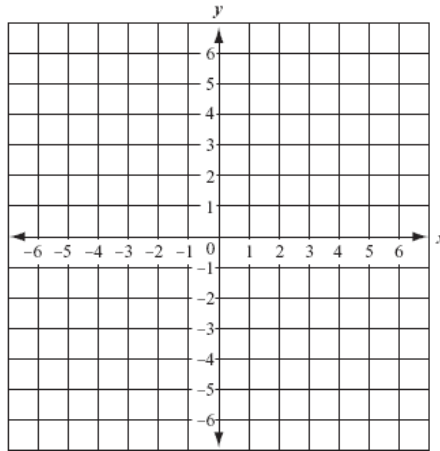
Example #1: Graph the following quadratic inequalities.

1. $y > x^2 + 3x - 4$

2. $y \geq -(x - 3)(x + 1)$

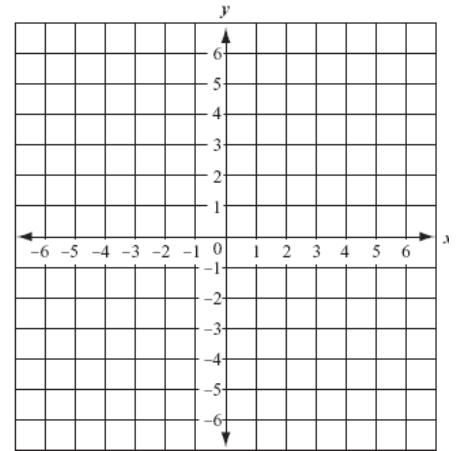
AOS: _____

Vertex: _____



AOS: _____

Vertex: _____



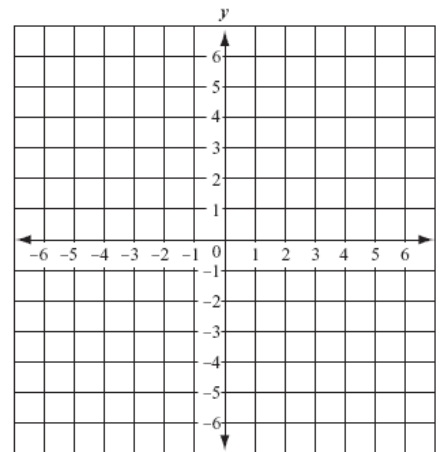
You practice: Graph the following quadratic inequalities.

3. $y < -x^2 + 4x + 2$

4. $y \geq \frac{1}{2}(x - 3)^2 + 2$

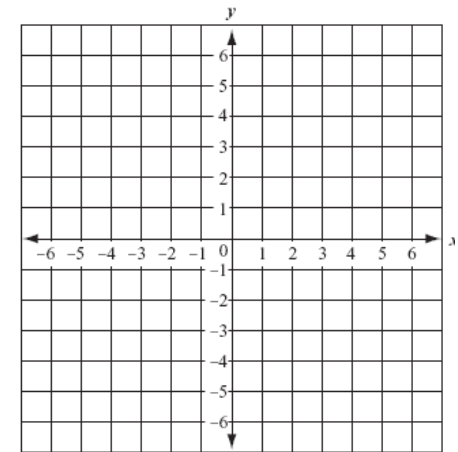
AOS: _____

Vertex: _____



AOS: _____

Vertex: _____



Notes:

A _____, consists of two _____.

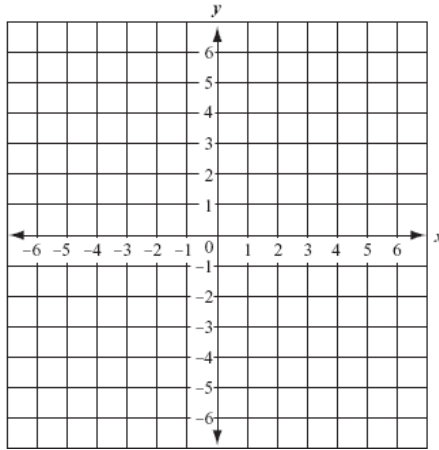
The _____ of a system of inequalities is the graph of all _____ of the system (the _____ where the _____ overlaps).

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Example #2: Graph the system of quadratic inequalities.

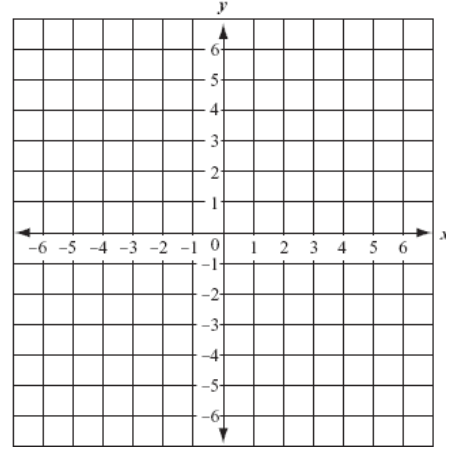
1. $y \leq -x^2 + 4$

$y > x^2 - 2x - 3$



2. $y > (x + 1)(x + 3)$

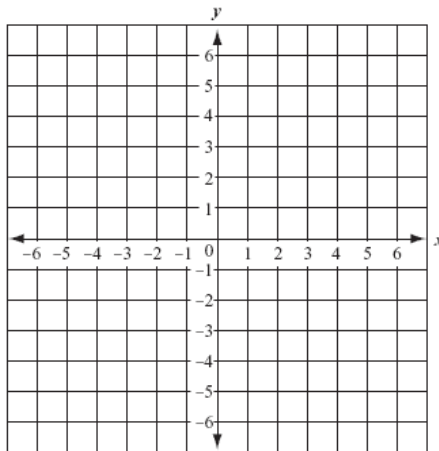
$y \geq -2(x + 3)^2 + 5$



You practice: Graph the system of quadratic inequalities.

1. $y \geq x^2 - 4$

$y < -(x - 3)(x + 1)$



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

$y < 2x^2 + x - 8$

