



**Lesson Objectives** (p. 366):

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**Vocabulary**

1. Quadratic inequalities in two variables (p. 366): \_\_\_\_\_

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**Key Concepts**

2. Graphing Quadratic Inequalities (p. 366):

TO GRAPH A QUADRATIC INEQUALITY	
1.	
2.	
3.	

3. **Get Organized** Compare the solutions of quadratic equations and inequalities. (p. 370).

	EQUATION (=)	“LESS THAN” INEQUALITY ( $<$ or $\leq$ )	“GREATER THAN” INEQUALITY ( $>$ or $\geq$ )
Example			
Graph			
Solution Set			



## Lesson Objectives (p. 366):

solve quadratic inequalities by using tables and graphs; solve quadratic inequalities by using algebra.

## Vocabulary

1. Quadratic inequalities in two variables (p. 366): an inequality that can be written in one of the following forms, where  $a$ ,  $b$ , and  $c$  are real numbers and  $a \neq 0$ . Its solution is a set of ordered pairs  $(x, y)$ .

$$y < ax^2 + bx + c \quad y > ax^2 + bx + c$$

$$y \leq ax^2 + bx + c \quad y \geq ax^2 + bx + c$$

## Key Concepts

2. Graphing Quadratic Inequalities (p. 366):

TO GRAPH A QUADRATIC INEQUALITY	
1. Graph the parabola that defines the boundary.	
2. Use a solid parabola for $\leq$ and $\geq$ and a dashed parabola for $<$ and $>$ .	
3. Shade above the parabola for $y >$ or $\geq$ and below the parabola for $y \leq$ or $<$ .	

3. **Get Organized** Compare the solutions of quadratic equations and inequalities. (p. 370).

	EQUATION (=)	“LESS THAN” INEQUALITY ( $<$ or $\leq$ )	“GREATER THAN” INEQUALITY ( $>$ or $\geq$ )
Example	$x^2 - 4 = 0$	$x^2 - 4 < 0$	$x^2 - 4 > 0$
Graph			
Solution Set	$x = \pm 2$	$-2 < x < 2$	$x < -2$ or $x > 2$