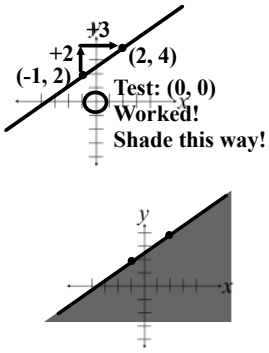
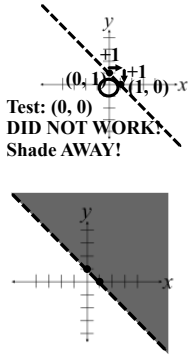
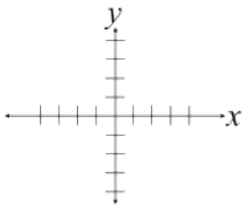
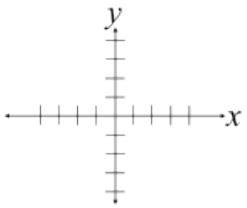
Name: _____ Per.: _____

Graphing Linear Inequalities

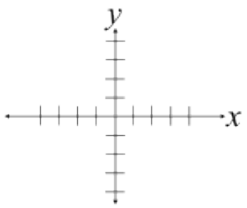
Graphing linear inequalities starts with the same process for graphing a line—identify the slope and a point on the line…then graph 'em. With inequalities, you have to add two more pieces:

1) Is the line solid or dotted?
   If the inequality is "OR EQUAL TO," then the line is SOLID.
   If the inequality is "NOT EQUAL TO," then the line is DOTTED.

2) Which side of the line should you shade?
   To answer this question, you pick ANY POINT THAT IS NOT ON THE LINE, plug it in and see if it works. *Tip: Use the easiest point you can. I suggest either (0, 0), (0, 1), or (1, 0).*
   If the point WORKS, then shade TOWARDS THE TEST POINT.
   If the point DOESN'T WORK, then shade AWAY FROM THE TEST POINT.

Inequality	Graph	Inequality	Graph
EXAMPLE $y - 2 \leq \frac{2}{3}(x + 1)$ Solid or Dotted? Slope: $m = \frac{2}{3}$ Point: (-1, 2) Pick a Test Point: (0, 0) (0, 1) or (1, 0) $y - 2 \leq \frac{2}{3}(x + 1)$ $0 - 2 \leq \frac{2}{3}(0 + 1)$ $-2 \leq \frac{2}{3}(1)$ $-2 \leq \frac{2}{3}$ That works! Shading: Toward Test Pt or away?		**EXAMPLE** $y > -x + 1$ Solid or Dotted? Slope: $m = \frac{-1}{1}$ Point: b = 1, so (0, 1) Pick a Test Point: (0, 0) (0, 1) or (1, 0) $y > -x + 1$ $0 > -0 + 1$ $0 > 1$ That doesn't work!! Shading: Toward Test Pt or away?	
1. $y + 1 < 2(x - 2)$ Solid or Dotted? Slope: _____ Point: _____ Pick a Test Point: (0, 0) (0, 1) or (1, 0) Shading: Toward Test Pt or away?		2. $y \geq \frac{1}{2}x + 3$ Solid or Dotted? Slope: _____ Point: _____ Pick a Test Point: (0, 0) (0, 1) or (1, 0) Shading: Toward Test Pt or away?	

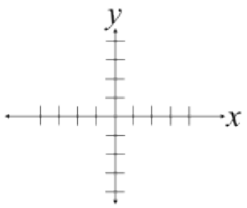
3. $y + 4 \leq \frac{4}{3}(x + 3)$



Solid or Dotted?
Slope: _____
Point: _____
Pick a Test Point:
(0, 0) (0, 1) or (1, 0)

Shading:
Toward Test Pt or away?

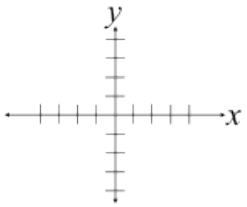
4. $y < 3x - 2$



Solid or Dotted?
Slope: _____
Point: _____
Pick a Test Point:
(0, 0) (0, 1) or (1, 0)

Shading:
Toward Test Pt or away?

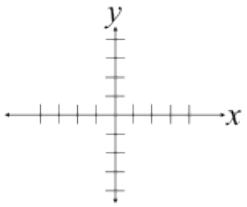
5. $y - 2 \geq -2(x)$



Solid or Dotted?
Slope: _____
Point: _____
Pick a Test Point:
(0, 0) (0, 1) or (1, 0)

Shading:
Toward Test Pt or away?

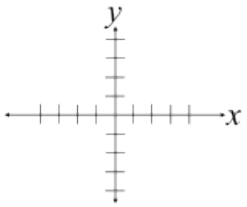
6. $y > -2x + 4$



Solid or Dotted?
Slope: _____
Point: _____
Pick a Test Point:
(0, 0) (0, 1) or (1, 0)

Shading:
Toward Test Pt or away?

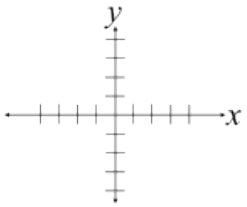
7. $y - 1 > (x - 1)$



Solid or Dotted?
Slope: _____
Point: _____
Pick a Test Point:
(0, 0) (0, 1) or (1, 0)

Shading:
Toward Test Pt or away?

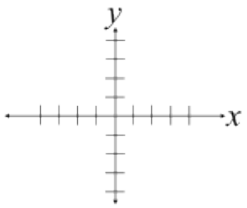
8. $y \leq \frac{1}{3}x - 3$



Solid or Dotted?
Slope: _____
Point: _____
Pick a Test Point:
(0, 0) (0, 1) or (1, 0)

Shading:
Toward Test Pt or away?

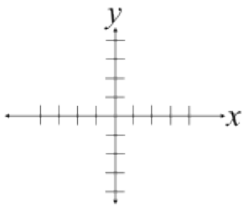
9. $y + 4 < \frac{5}{2}(x - 2)$



Solid or Dotted?
Slope: _____
Point: _____
Pick a Test Point:
(0, 0) (0, 1) or (1, 0)

Shading:
Toward Test Pt or away?

10. $y \geq -\frac{5}{3}x + 4$



Solid or Dotted?
Slope: _____
Point: _____
Pick a Test Point:
(0, 0) (0, 1) or (1, 0)

Shading:
Toward Test Pt or away?