Lesson SY – 6

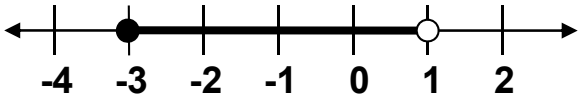
Objective: Graphing Linear Inequalities

Homework SY6 – NYA p.407 #1, 2, 5, 7, 8, 10, 11 – 13, 20, 50, 51

Do Now: Solve the linear inequalities.

1. $\frac{1}{2}x - 4 \geq -4$	2. $-6a + 2 < 29$

Exam Prep: Which set is equal to:



a) $-3 < y < 1$ b) $-3 \leq y \leq 1$ c) $-3 \leq y < 1$ d) $-3 < y \leq 1$

A very special message from The Doctor…

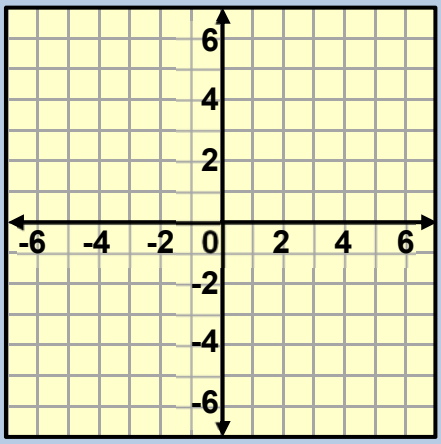
Use your knowledge of y = mx + b and graphing inequalities on a number-line and you will be good?

Remember when you fill in the circle? I shall kill you if you don't.

Investigation: Graphing Inequalities

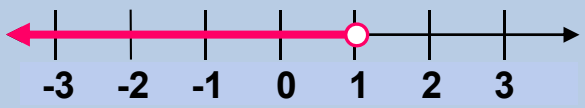
1. Graph y = x + 4 on a coordinate plane using your graphing calculator.
   a. Recall the solutions to this linear equation are coordinates on the graph.
2. Choose a point ABOVE the line, BELOW the line, and ON the line.
   a. Which of the coordinates would be solutions to y > x + 4?
3. How might you show the solutions to y > x + 4?

Workspace



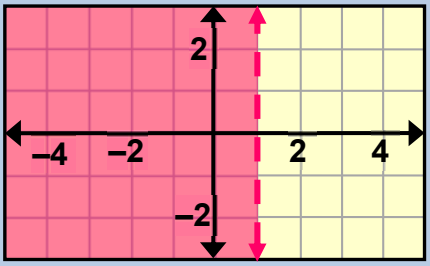
Graphing linear inequalities is similar to graphing on a number line.

Number Line: x < 1

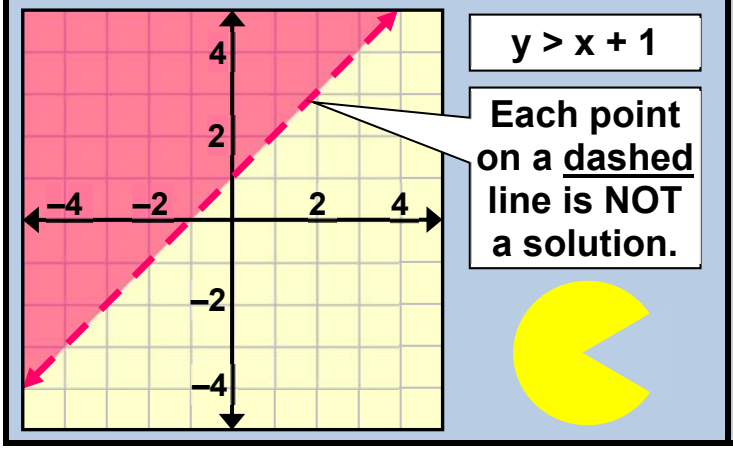


Note: This is Prior Knowledge!

Coordinate Plane: x < 1



Linear inequalities describe regions of a plane that have boundary lines. The solutions to the inequalities are all coordinates that make the inequality true.

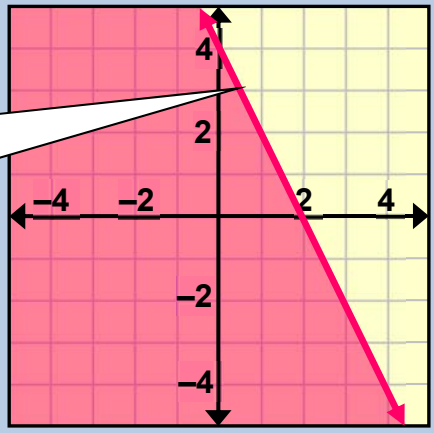


$y > x + 1$

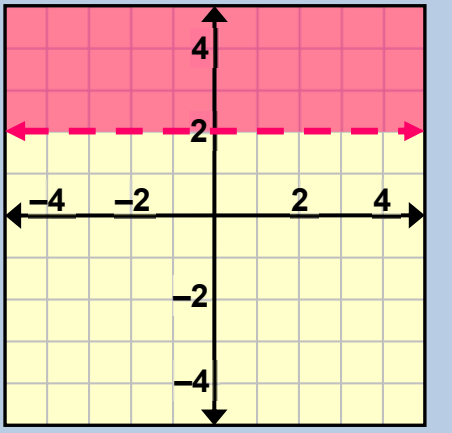
Each point on a dashed line is NOT a solution.

$y \leq -2x + 4$

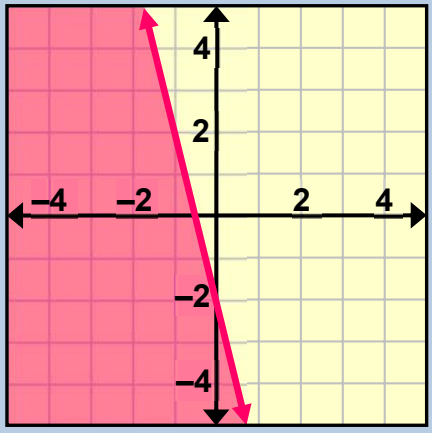
Each point on a solid line is a solution.



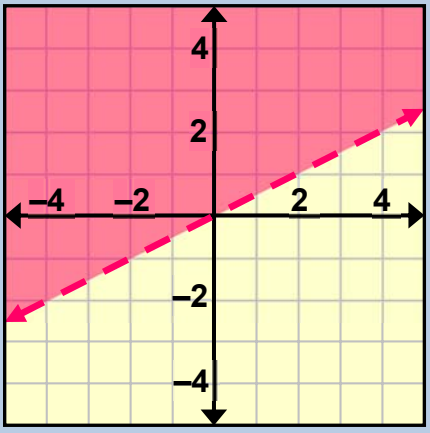
Practice: Write the inequality represented by the graph



A)



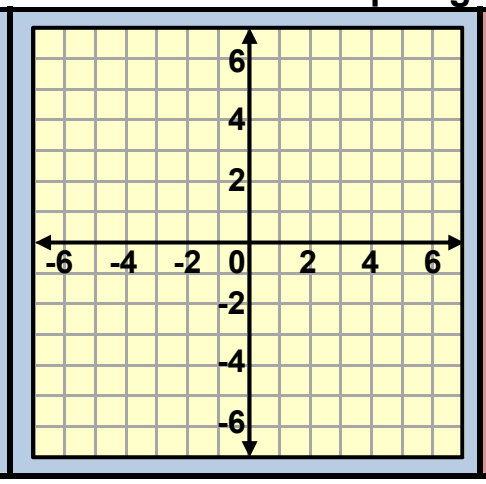
B)



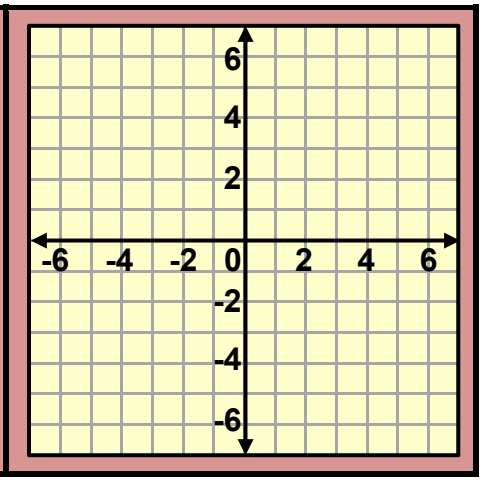
C)

Practice Graphing Linear Inequalities

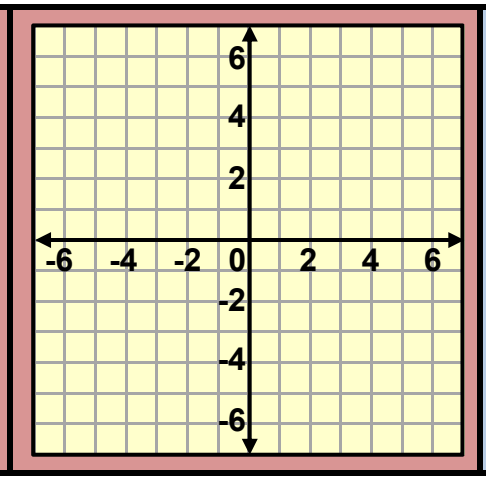
$y \leq 4x + 1$



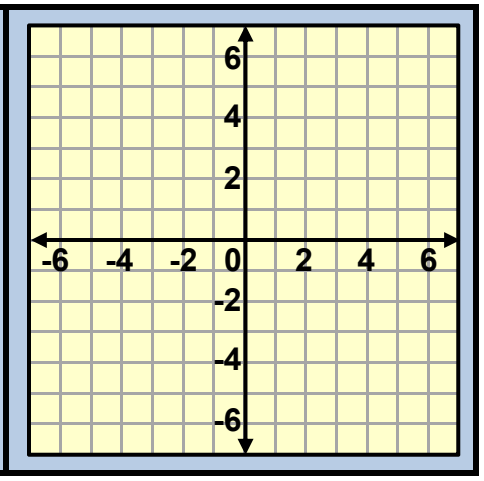
$6x + 3y \geq 12$



$y > 5x - 5$

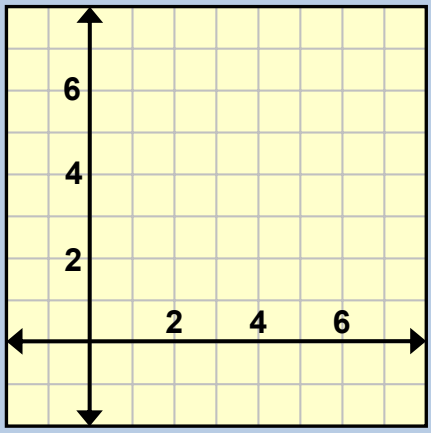


$y < \frac{1}{2}x$



Extra Word Problem: Real World Graph

Suppose your budget for a party allows you to spend no more than $12 on the peanuts and cashews. Peanuts are $2/lb. and cashews are $4/lb. Write the inequality, graph it, and find three possible combinations of peanuts and cashews you can buy.



Linear Inequality:

Combo 1: (,)

Combo 2: (,)

Combo 3: (,)