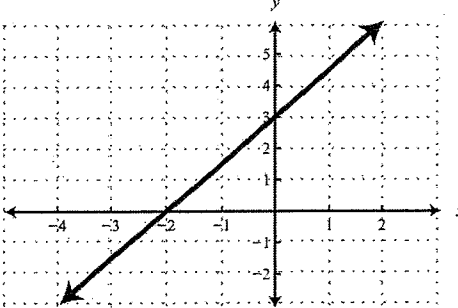
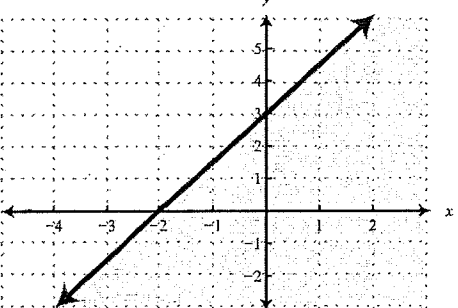


In Module 12 (we will begin this tomorrow), we are going to start graphing Systems of Linear Inequalities. Therefore, it makes sense that we review how to graph one Linear Inequality.

Linear Equation	Linear Inequality
$y = \frac{3}{2}x + 3$	$y \leq \frac{3}{2}x + 3$
	

Please note that there is a solid line as well as shading below the graph because there is a "less than or equal to" inequality.

Within the shaded portion of the graph, there are billions of solutions. For example, (1, -1) is considered a solution to the Linear Inequality.

Here is an example that should help you with today's problems, though I sincerely hope that you help one another. Good Luck.

## Solving Linear Inequalities

### Example 2A: Graphing Linear Inequalities in Two Variables

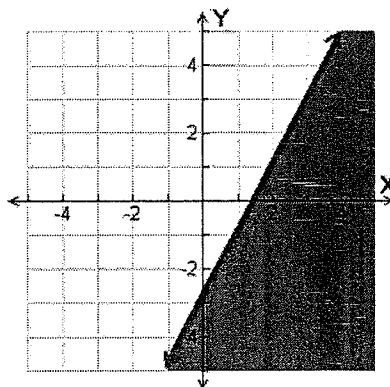
Graph the solutions of the linear inequality.

$$y \leq 2x - 3$$

**Step 1** The inequality is already solved for  $y$ .

**Step 2** Graph the boundary line  $y = 2x - 3$ . Use a solid line for  $\leq$ .

**Step 3** The inequality is  $\leq$ , so shade below the line.



As a reminder, Solutions for this inequality include all of the ordered pairs on the solid line. For example, (4, 0) is just one of many solutions.

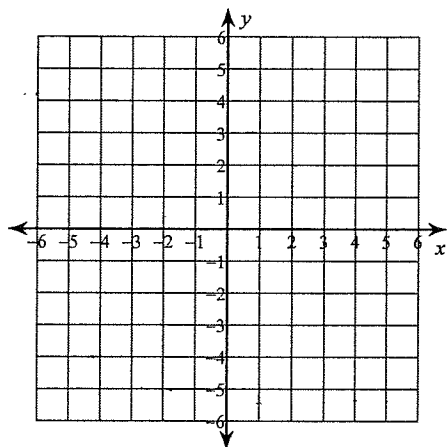


## Graphing Linear Inequalities

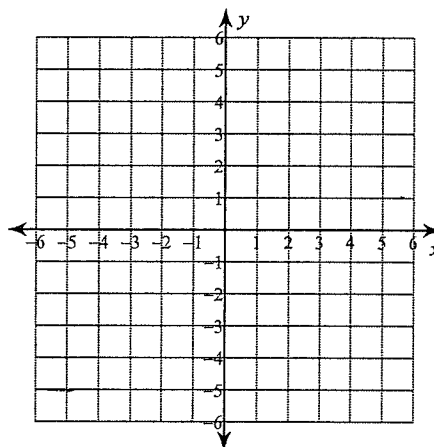
Date \_\_\_\_\_ Period \_\_\_\_\_

Sketch the graph of each linear inequality.

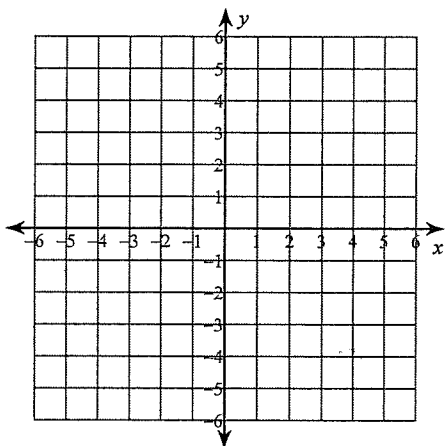
1)  $y \geq -3x + 4$



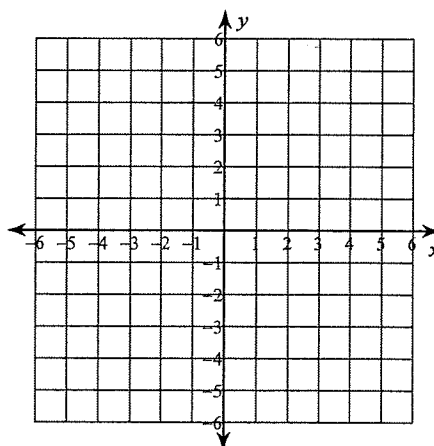
2)  $y \leq \frac{3}{5}x - 5$



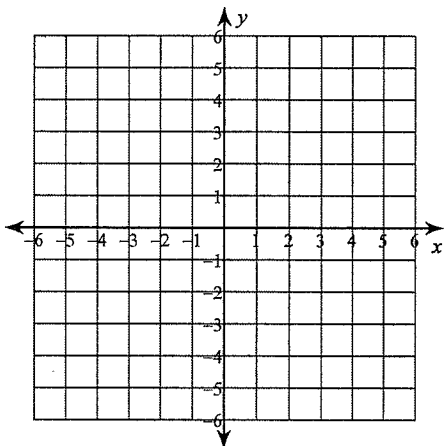
3)  $y > -x - 5$



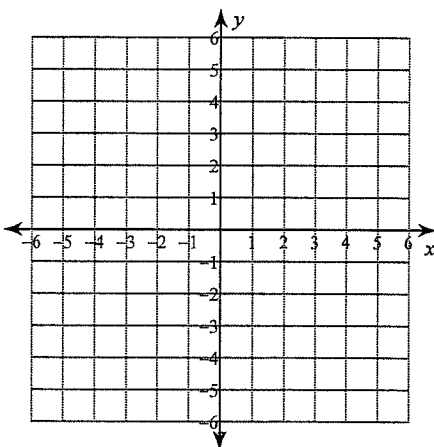
4)  $y > -4$



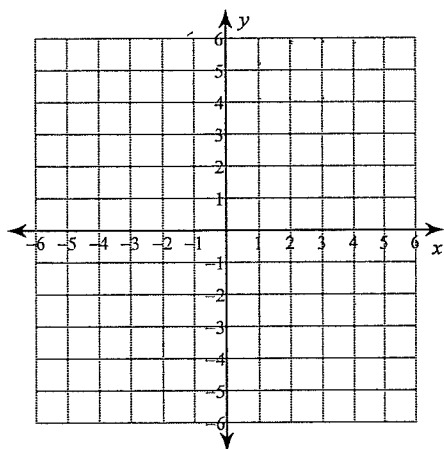
5)  $y > 2x - 5$



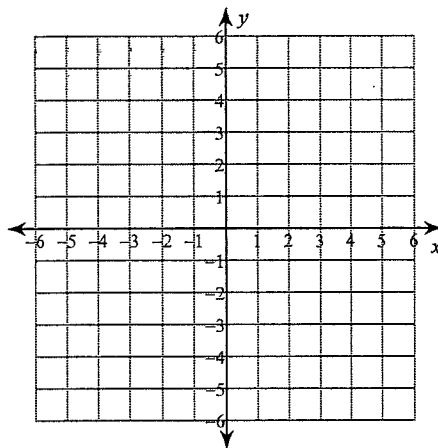
6)  $y \geq \frac{7}{4}x + 2$



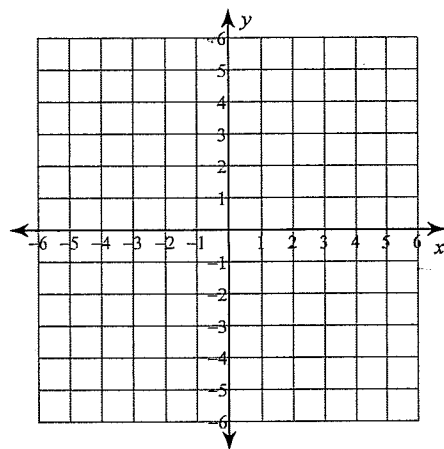
7)  $x < -5$



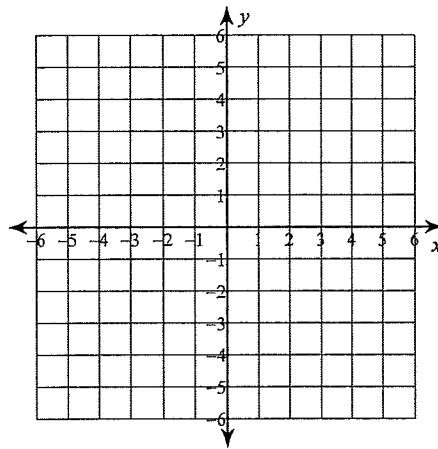
8)  $y \leq \frac{4}{3}x - 4$



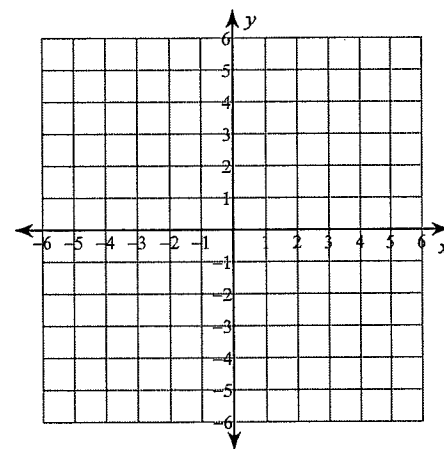
9)  $3x - 2y < 10$



10)  $5x - 3y \leq -15$



11)  $y \geq 4$



12)  $x - y > 2$

