LAB 6–A

GRAPHING LINEAR INEQUALITIES

Name _____

Partner _____

Date _____

Materials: TI-80 graphing calculator, graph paper

Before you start, clear the calculator's memory. Press MEM and select the Reset settings until the display indicates that the memory is cleared.

1. a. Write three ordered pairs that are solutions to the equation $y = 3x + 1$.

   b. Write three ordered pairs that are solutions to the inequality $y > 3x + 1$.

   c. Write three ordered pairs that are solutions to the inequality $y < 3x + 1$.

   d. On the calculator, press DRAW (2nd and PRGM) and select Shade_Y>. Type in $3x + 1$ and press ENTER. Sketch the display on the calculator onto graph paper. [**Note**: On higher-numbered models, press Y= and enter $y = 3x + 1$. Press DRAW, then select Shade and input the entry Shade (Y_1, 10). To display Y_1, press VARS; select Y-VARS, then select Function followed by Y_1.]

   e. Describe where the points for the ordered pairs in 1.a. are on the display: on the line $y = 3x + 1$, on the shaded side of the line, or on the unshaded side of the line.

   f. Describe where the points for the ordered pairs in 1.b. are on the display.

   g. Describe where the points for the ordered pairs in 1.c. are on the display.

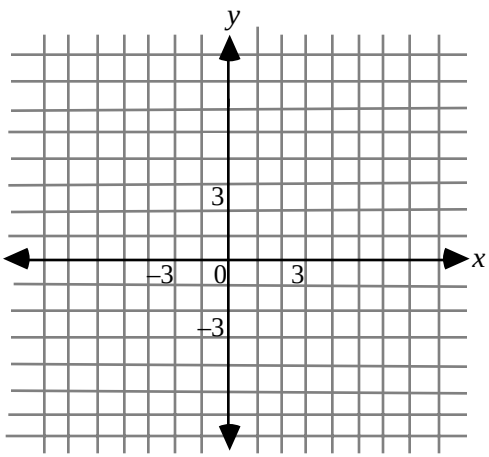
1. h. How do you think the graphs of $y > 3x + 1$ and $y \geq 3x + 1$ compare?

2. a. Write three ordered pairs that are solutions to the inequality $y < 2x - 3$.

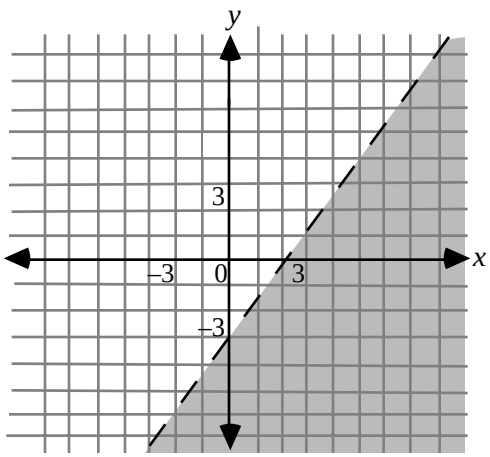
   b. On the calculator, press DRAW (2nd and PRGM) and select Shade_Y<. Type in $2x - 3$ and press ENTER. Sketch the display on the calculator onto graph paper. [**Note**: On higher numbered models, press Y= and enter $y = 2x - 3$. Press DRAW then select Shade and input the entry Shade $(-10, Y_1)$. To display Y_1, press VARS; select Y-VARS, then select Function followed by Y_1.]

   c. Describe where the points for the ordered pairs in 2.a. are on the display.

3. Graph $y > 2x - 1$. Use the graphing calculator to verify your graph.



4. Write an inequality for the graph shown below. Use the graphing calculator to verify your inequality.



5. How is graphing an inequality like or unlike graphing an equation? Use examples to support your answer.