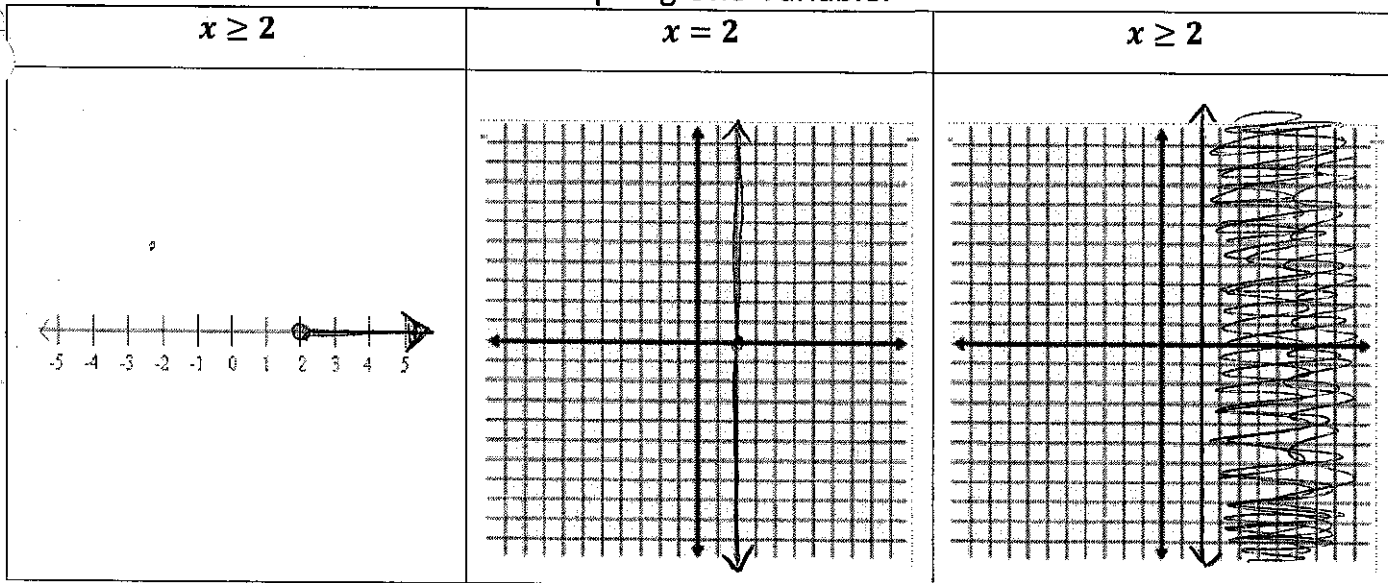
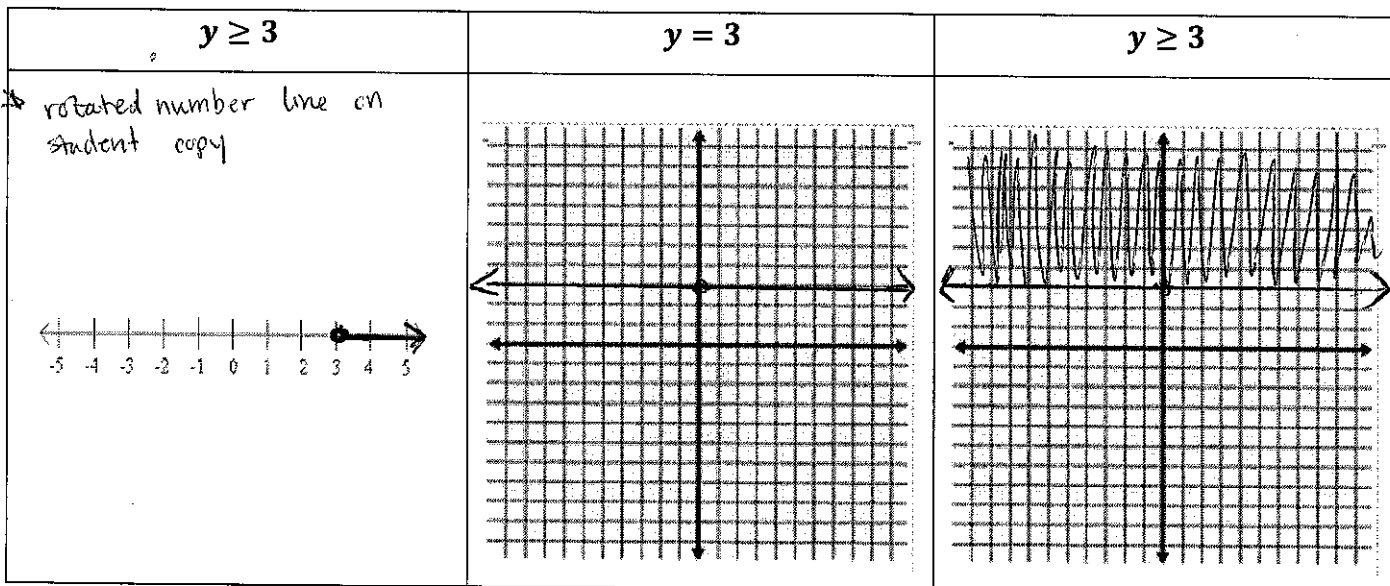


Graphing One-Variable:



What patterns do you notice?

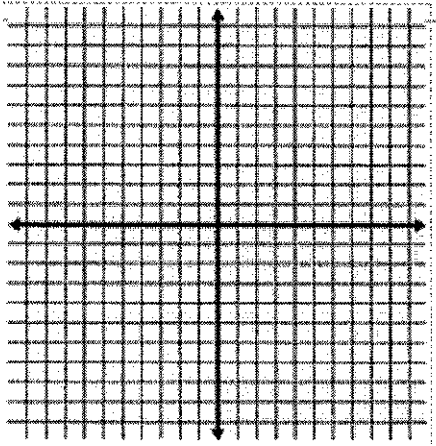


What patterns do you notice?

Graphing Two-Variable:

DIRECTIONS: Graph the inequality and finish the table

$$x + y \geq 2$$



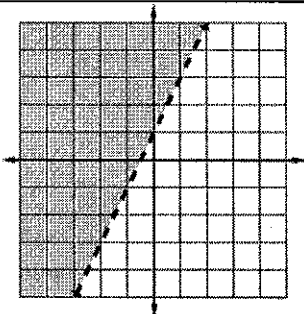
- How could you find two points on the graph? *answers vary*
- solve for y and "plug in" x values
- consider when $x, y = 0$

PREDICT Do you think the graph to the left is the same graph as $y \geq -x + 2$? Why or why not?

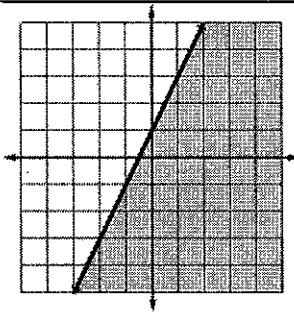
answers vary (it is the same graph)

Complete the card sort with your group to label the graphs below.

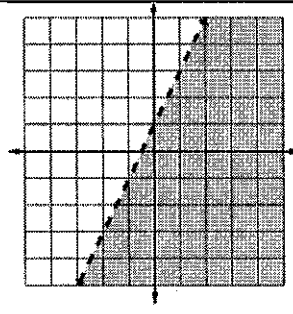
$$y > 2x + 1 \quad c$$



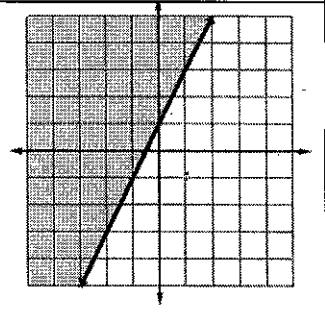
$$y \leq 2x + 1 \quad b$$



$$y < 2x + 1 \quad d$$



$$y \geq 2x + 1 \quad a$$



Work with your group to create rules for graphing lines and inequalities that are expressed in slope-intercept form ($y = mx + b$). Try to answer the questions below.

- How would you graph (or draw) your first point?
- How would you find a second point?
- Do you need more than two points?
- When should your line be dashed? When should it be solid?
- How can you tell where on the coordinate-plane to shade?

Method 1: Graphing when the line is in slope-intercept form ($y = mx + b$):

- Graph the y-intercept (b) on the y-axis as point $(0, b)$.
- From this point $(0, b)$, use the slope (m) to find another point. For example, if the slope, is $\frac{2}{3}$ you might graph a point that is two units up in the y-direction and three units left in the x-direction for a point that is at $(3, b+2)$
- Draw a line:
 - If there is (some) equality expressed ($=, \leq, \text{ or } \geq$), use a solid line.
 - If there is inequality expressed ($> \text{ or } <$) use a dashed line.
 - If you are graphing an inequality ($>, <, \leq, \text{ or } \geq$), shade the area which contains solutions.

Method 2: Graphing when the line is in slope-intercept form ($y = mx + b$):

- Choose a value for x to determine a y value. Then plot the point.
- Choose another value for x to determine another y value. Then plot the point.
- Draw a line. Follow above method for determining shading and line type.

Method 1: Graphing when the line is in slope-intercept form ($y = mx + b$):

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Method 2: Graphing when the line is in slope-intercept form ($y = mx + b$):

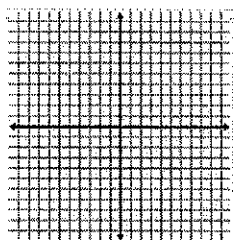
- Choose a value for x to determine a y value. Then plot the point.
- Choose another value for x to determine another y value. Then plot the point.
- Draw a line. Follow above method for determining shading and line type.

When does $x = 2$?

Are the points $(2, 0)$, $(2, 3)$ and $(2, 9)$ on the line $x=2$?

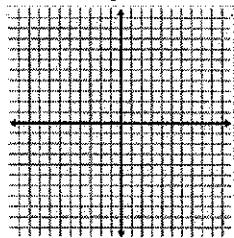
Does the point $(3, 2)$ make the statement $x = 2$ true or false?

$$x + y \geq 2$$



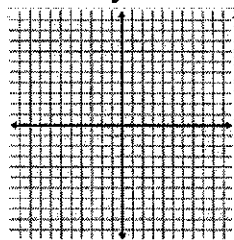
What would y equal if x were 0? $(0, \underline{\quad})$

$$x + y \geq 2$$



What would x equal if y were 0? $(\underline{\quad}, 0)$

$$x + y \geq 2$$



With these two points, can you draw a line?

$$x + y \geq 2$$

Use your knowledge of literal equations. What would happen if you solved for y ?