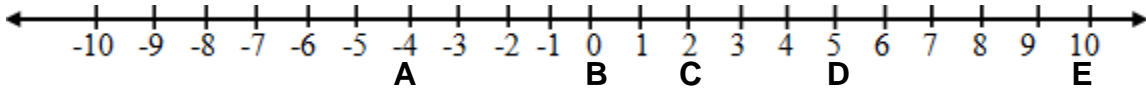


Name \_\_\_\_\_

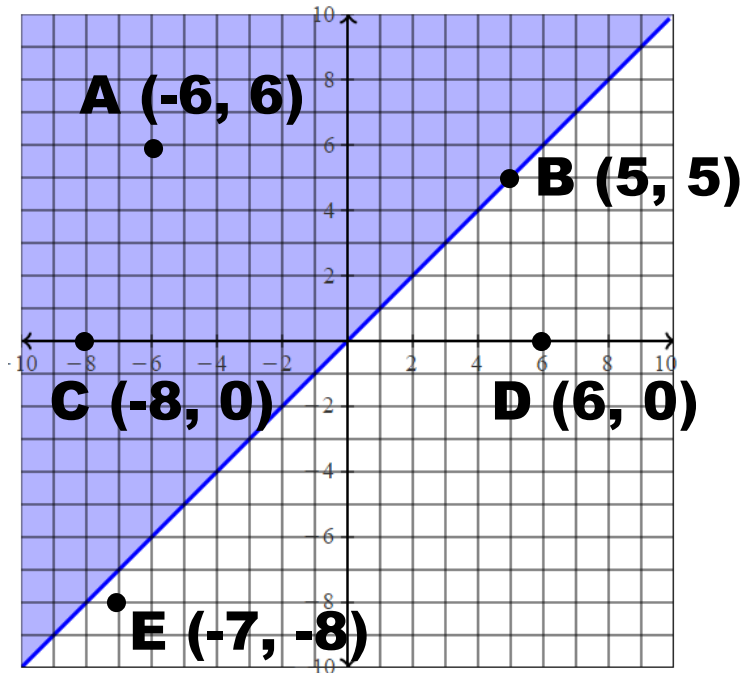
## GRAPHING TWO VARIABLE INEQUALITIES – Day 1

**Recall:** Inequalities with one variable can be plotted on a number line, as in the case of  $x \geq 2$ .



The solution to an inequality is a point which, when substituted in for the variable(s), makes the inequality a true statement. The points \_\_\_\_\_ are solutions to the above inequality.

Inequalities with two variables need to be plotted on a coordinate plane, as in the case of  $y \geq x$ .



The points \_\_\_\_\_ are solutions to the above inequality, because for each point the y-value is greater than or equal to the x-value. The shaded region is also known as the solution region because all points which lie in this region represents solutions to the inequality.

To graph a two-variable inequality, use the following steps.

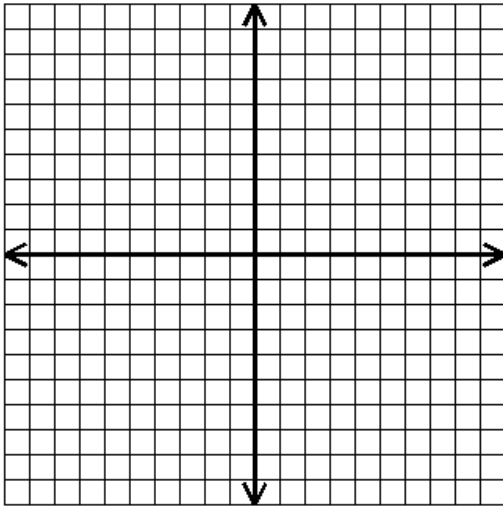
**Step 1:** Solve for y when necessary.

**Step 2:** Graph the line using a **SOLID LINE** for  $\leq$  or  $\geq$ . Graph a **DOTTED LINE** for  $<$  or  $>$ .

**Step 3:** Shade **BELOW** the line if  $<$  or  $\leq$ . Shade **ABOVE** the line if  $>$  or  $\geq$ .

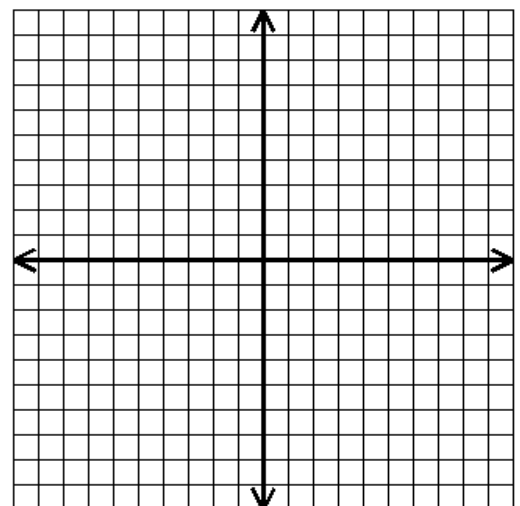
1. Graph  $y \leq -2x - 3$

m:  
b:  
D or S  
A or B



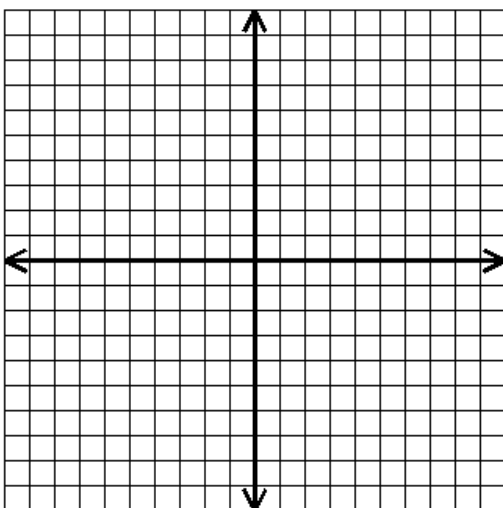
2. Graph  $y > \frac{1}{2}x - 3$

m:  
b:  
D or S  
A or B



3. Graph  $y > x - 4$

m:  
b:  
D or S  
A or B



4. Graph  $y \leq -\frac{2}{3}x + 5$

m:  
b:  
D or S  
A or B

