

**3B Is Greater Than (>), Is Less Than (<)**

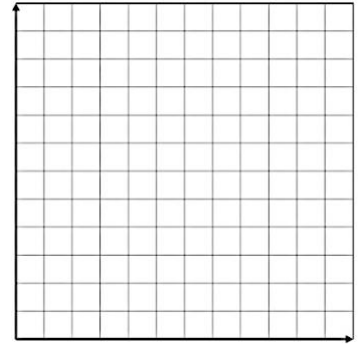
Name: \_\_\_\_\_ Per: \_\_\_\_\_

SHOW YOUR WORK FOR FULL CREDIT. NO WORK IN PEN.

**Objectives:** Write an inequality from a story problem (1 or 2 variable)

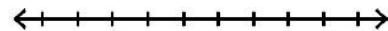
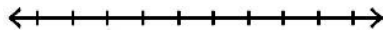
Due: Oct 8<sup>th</sup> / Oct 9<sup>th</sup>

1. The Yellow Cab Taxi charges \$5.00 when you enter his taxi in addition to \$3.50 for each mile he drives you.
  - a. Write an equation \_\_\_\_\_
  - b. Graph the equation on the graph to the right. Label your graph. (x-axis by 2 miles and y-axis by \$2.00)
  - c. Write how would your equation would change if the taxi charges AT LEAST \$5.00 when you enter his taxi. \_\_\_\_\_
  - d. Change your graph if the taxi charges you no more than \$5.00.



Write the following word sentences as an inequality. Solve and graph to show the solution set.

2. Four times a number *is greater than* 20 decreased by the number
3. One-half the height multiplied by the sum of base 1 and base 2 equals the area of a trapezoid. Solve for h. For EC, solve for base 1.



**Write an inequality to match the story problem and solve for your variable and graph the solution. SYW.**

4. Subway sells an 8-foot sandwich for *at most* \$22.40. How much would the cost be for a foot?
  - a. Write the inequality: \_\_\_\_\_
  - b. Solve: \_\_\_\_\_
  - c. Find the possible solutions. \_\_\_\_\_
  - d. Graph the solution set.
5. Last Friday Marissa had \$22.50. Over the weekend, she received some money for babysitting. She now has *less than* \$32.00. How much money did she get for babysitting?
  - a. Write the inequality: \_\_\_\_\_
  - b. Solve: \_\_\_\_\_
  - c. Find the possible solutions. \_\_\_\_\_



6. Gaige is planning a party for Halloween. His parents told him that he could not spend more than \$360 on the whole party. He is making party bags for each of guest. He figures he will invite 30 girls and 10 boys.
  - a. Define your variables (do not use  $x$  and  $y$ ): \_\_\_\_\_

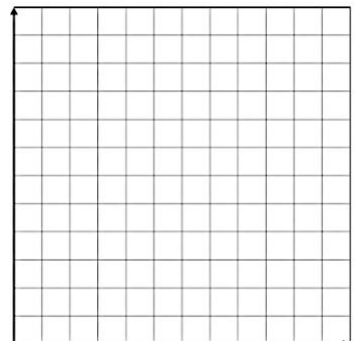
b. Write an inequality to describe the cost of the party. \_\_\_\_\_

c. If he spends \$0 on the bags for boys, how much would he spend on the bags for the girls? \_\_\_\_\_

d. If he spends \$0 on the bags for the girls, besides being very lonely in high school, how much will he spend on bags for the boys? \_\_\_\_\_

e. Find the intercepts \_\_\_\_\_ & \_\_\_\_\_

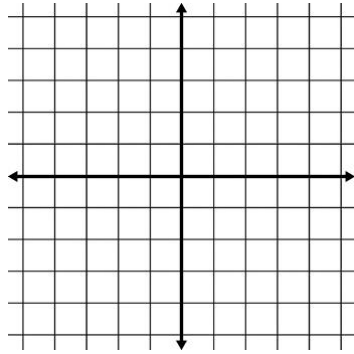
f. Graph the inequality.



9. Describe how you would graph an inequality that was in  $y = mx + b$  form: \_\_\_\_\_
10. Describe how you would graph an inequality that was in  $ax + by = c$  form: \_\_\_\_\_
11. Explain when you use a dotted line or solid line when graphing inequalities on a coordinate plane.  
 Dotted Line: \_\_\_\_\_ Solid Line: \_\_\_\_\_

**Graph** the following inequalities. (Hint: solid or dotted?) **Use a Test Point** to determine where to shade.

12.  $y \geq -3x + 2$

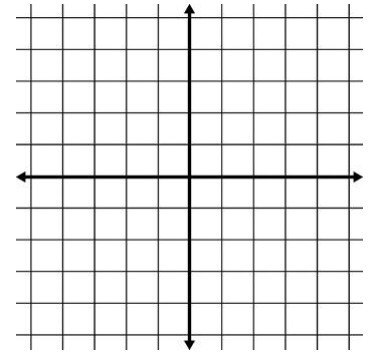


Solid OR Dotted Boundary Line?

TEST POINT (**EX**): (0, 0).  $0 \geq 0 + 2$ , **NOT TRUE**  
 Shade on the side of the line that **DOES NOT**  
 include the point (0,0) since it is **NOT** a solution.

Is (4, -3) part of the solution set? \_\_\_\_\_  
 TEST using your inequality:

13.  $y \leq \frac{3}{2}x + 1$



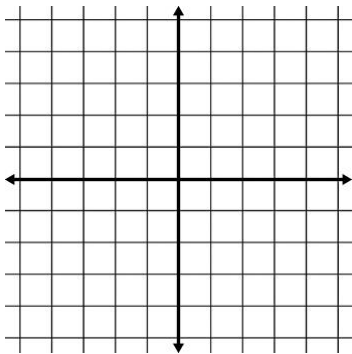
Solid OR Dotted Boundary Line?

TEST POINT: \_\_\_\_\_. True? \_\_\_\_\_

Is (4, 4) part of the solution set? \_\_\_\_\_  
 TEST using your inequality:

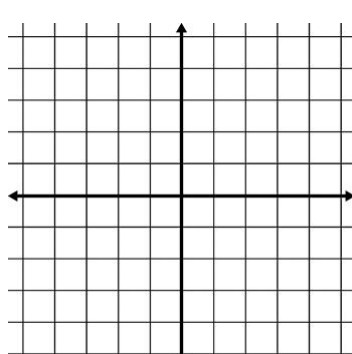
14.  $2x + 3y > 12$

x-intercept: ( , 0)  
 y-intercept: ( 0, )  
 Dotted or Solid Boundary  
 Test Point: \_\_\_\_\_



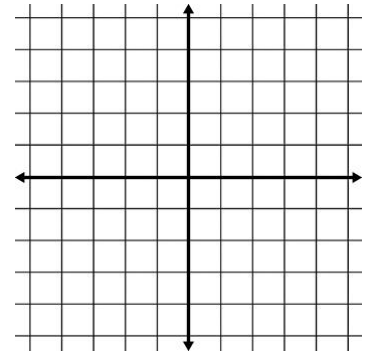
15.  $5x + 3y < 15$

x-intercept: \_\_\_\_\_  
 y-intercept: \_\_\_\_\_  
 Dotted or Solid Boundary  
 Test Point: \_\_\_\_\_



16.  $\frac{1}{2}x - 2y \geq 2$

x-intercept: \_\_\_\_\_  
 y-intercept: \_\_\_\_\_  
 Dotted or Solid Boundary  
 Test Point: \_\_\_\_\_



17. What should you do if your test point falls on the boundary line?
18. Will the point (2, 7) be part of the solution set for  $14 - 2x < y$ ? \_\_\_\_\_ How do you know? \_\_\_\_\_

