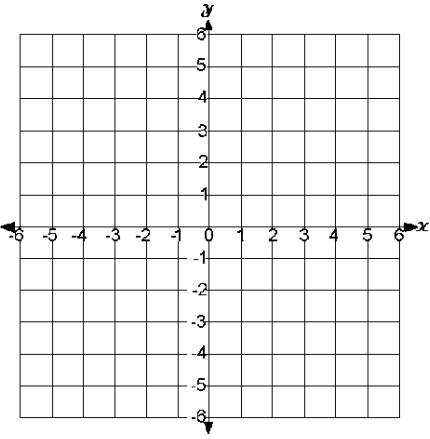
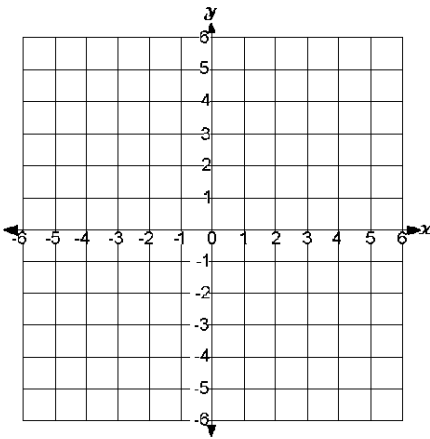
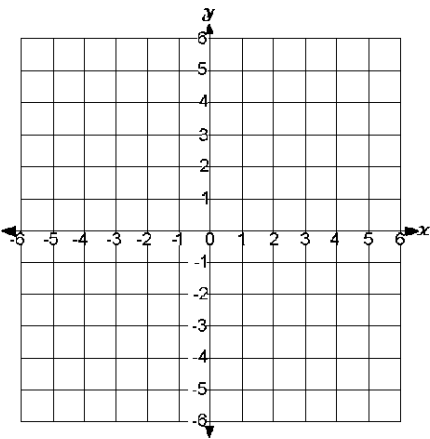


Algebra U6L3 – Graph Linear Inequalities (in Slope-Intercept Form)

**Warm Up...**

$y = -2x - 5$ <p>m = _____    b: ( 0,    )</p> 	$y = \frac{5}{4}x - 6$ <p>m = _____    b: ( 0,    )</p> 	$y = 2$ <p>m = _____    b: ( 0,    )</p> 
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**Today's Goal:**

- KWBAT graph the solution set of a linear inequality given in slope-intercept form
- WHY? This is the first time we will be using inequalities with two variables. Just like linear equations, we will use a lot of the skills we learned in the fall when we were graphing lines. Since linear inequalities have a lot of solutions, we will be learning how to shade in our graph to show all of the possible solutions. Also, this is Algebra standard A.3D which will show up on at least 3 questions on our STAAR End of Course Test.

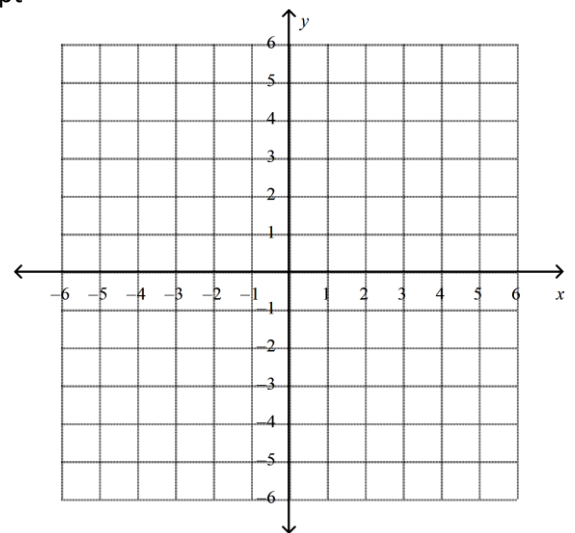
Example:  $y < -2x - 5$

1. Graph the \_\_\_\_\_ line using the slope and y-intercept

- a. Use a \_\_\_\_\_ line for  $\leq$  or  $\geq$   
(Points on the line are in the "solution set")
- b. Use a \_\_\_\_\_ line for  $<$  or  $>$   
(Points on the line are not in the "solution set")

2. Pick two \_\_\_\_\_ to substitute into the inequality

- a. Plug in one point above the line (    ,    ) Is it a solution?
- b. Plug in one point below the line (    ,    ) Is it a solution?



3. Shade the half-plane that contains the \_\_\_\_\_

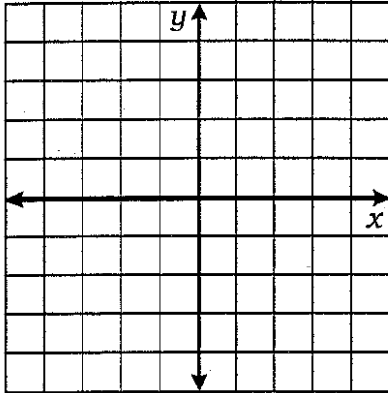
Guided Practice

# Why Did the Plum Divorce the Grape?

Graph each inequality. Under each grid are true-or-false statements describing the location of solutions. Circle the number-letter pair next to each TRUE statement. For these pairs, write the letter in the matching numbered box at the bottom of the page.

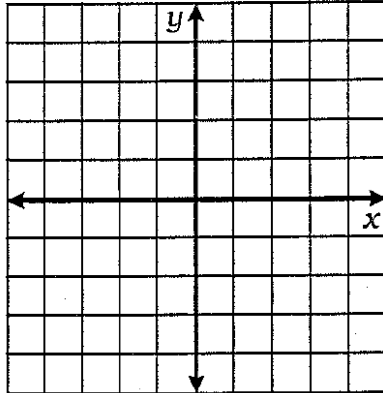


1.  $y \geq \frac{2}{3}x + 1$



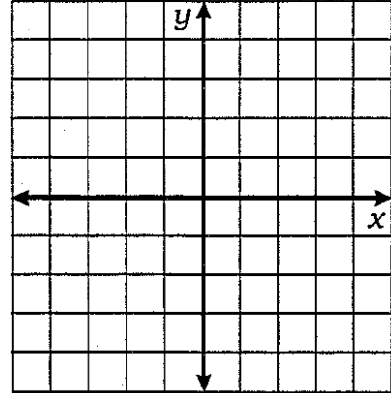
- 19•A Includes boundary line.
- 2•H Solutions in quadrant 1.
- 26•I Solutions in quadrant 2.
- 12•E Solutions in quadrant 3.
- 28•D Solutions in quadrant 4.

2.  $y > 2x - 3$



- 20•L Includes boundary line.
- 28•S Solutions in quadrant 1.
- 10•I Solutions in quadrant 2.
- 6•A Solutions in quadrant 3.
- 23•N Solutions in quadrant 4.

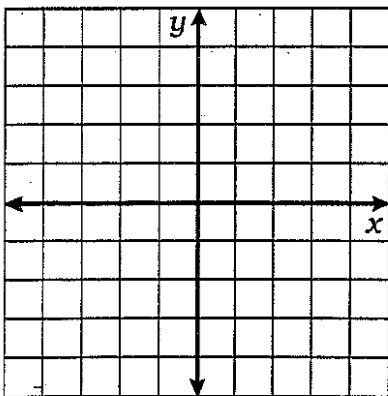
3.  $y \leq -\frac{1}{4}x - 1$



- 15•O Includes boundary line.
- 1•T Solutions in quadrant 1.
- 7•S Solutions in quadrant 2.
- 20•I Solutions in quadrant 3.
- 3•E Solutions in quadrant 4.

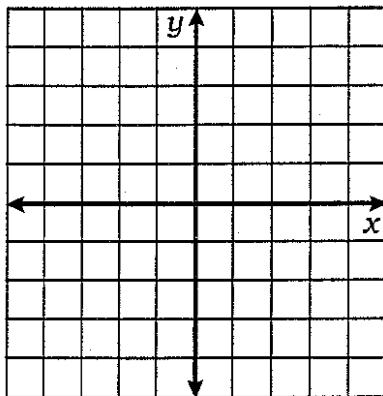


4.  $y < x - 2$



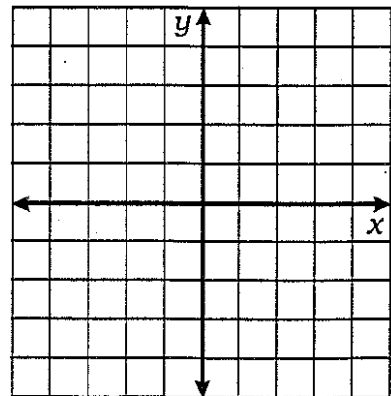
- 5•H Includes boundary line.
- 13•D Solutions in quadrant 1.
- 18•T Solutions in quadrant 2.
- 1•S Solutions in quadrant 3.
- 22•I Solutions in quadrant 4.

5.  $y > -\frac{4}{3}x + 1$



- 24•G Includes boundary line.
- 16•F Solutions in quadrant 1.
- 5•W Solutions in quadrant 2.
- 17•S Solutions in quadrant 3.
- 9•T Solutions in quadrant 4.

6.  $y \leq -x + 3$

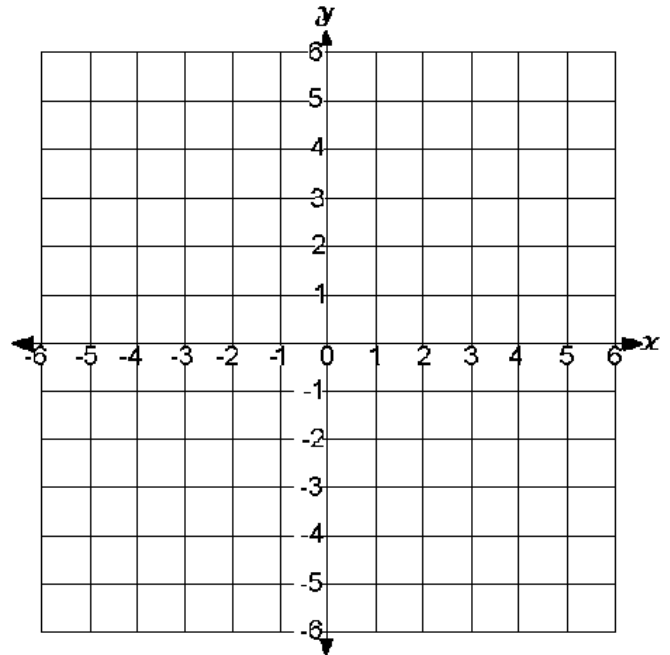


- 25•K Includes boundary line.
- 11•R Solutions in quadrant 1.
- 27•D Solutions in quadrant 2.
- 18•R Solutions in quadrant 3.
- 21•S Solutions in quadrant 4.

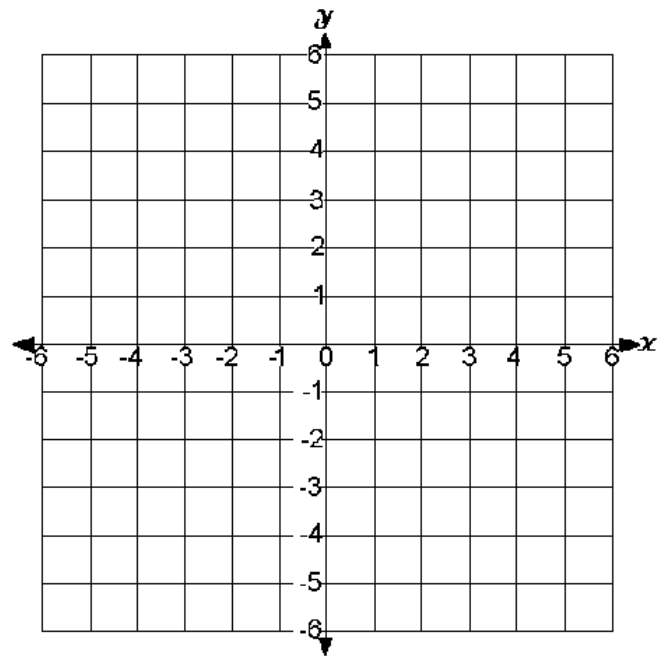
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
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## Independent Practice

1. Graph the inequality  $y > -3x - 1$  on the coordinate plane to the right.
2. Name two points that lie in the solution set.
3. Is the point  $(0,2)$  in the solution set of this inequality? Prove it using the inequality.



4. Graph the inequality  $y \geq \frac{2}{5}x + 1$  on the coordinate plane to the right.
5. Name two points that lie in the solution set.
6. Is the point  $(0,2)$  in the solution set of this inequality? Prove it using the inequality.



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

