

Good morning!

1. "Here"
2. Discuss homework
3. Notes on Graphing Systems of Inequalities
4. Practice p. 29-30 to CTLS

DeltaMath is homework:)

Left is less than right



Left is greater than right

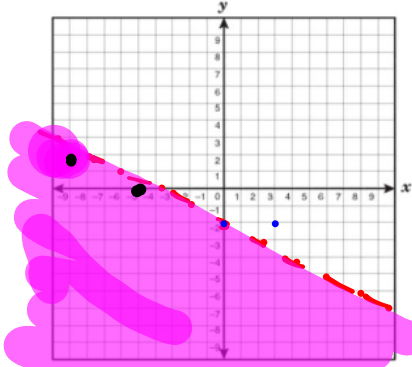


Graphing Linear Inequalities

Graph each linear inequality. Then determine which of the given ordered pairs is a solution. Check all that apply. ★ Remember, solutions lie in the shaded region (on a solid line touching the shaded region is okay, on a dashed line touching the shaded region is not okay) ★

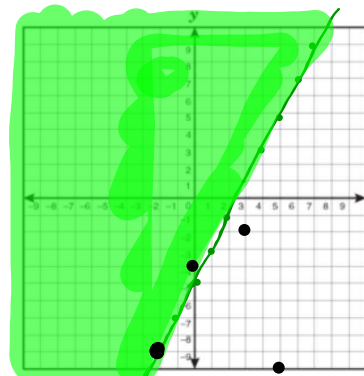
	solid line	dashed line
shade above	\geq	$>$
shade below	\leq	$<$

1) $y < -\frac{1}{2}x - 2$



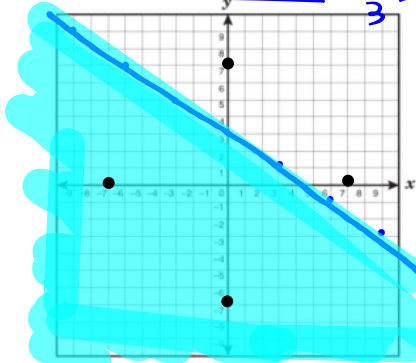
- Solutions:
- (-9, 2)
 - (-5, 0)
 - (0, -2)
 - (3, -2)

2) $y \geq 2x - 5$



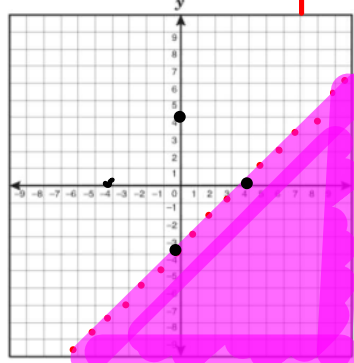
- Solutions:
- (-2, -9)
 - (0, -4)
 - (3, -2)
 - (5, -10)

3) $2x + 3y \leq 9$



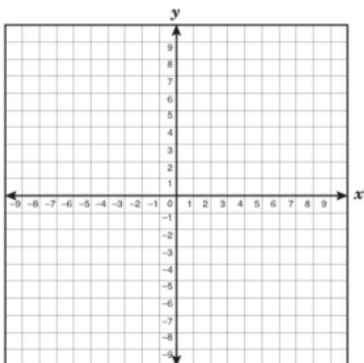
- $3y \leq -2x + 9$
 $y \leq -\frac{2}{3}x + 3$
 Solid below
- Solutions:
- (-7, 0)
 - (0, 7)
 - (7, 0)
 - (0, -7)

4) $x - y > 4$



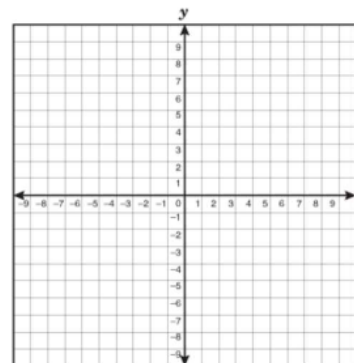
- $-y > -x + 4$
 $y < x - 4$
 Solid below
- Solutions:
- (-4, 0)
 - (0, 4)
 - (0, -4)
 - (4, 0)

5) $4x - 2y < -6$



- Solutions:
- (5, 1)
 - (1, 5)
 - (-5, -1)
 - (-1, 5)

6) $9x - 6y > -24$

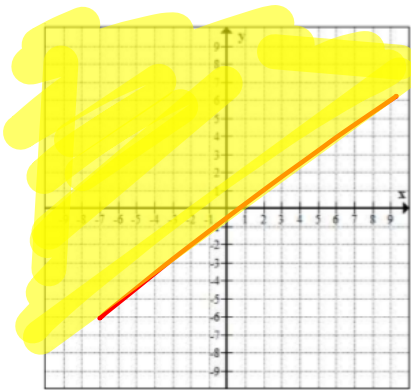


- Solutions:
- (-2, 3)
 - (-3, -2)
 - (0, 0)
 - (2, 5)



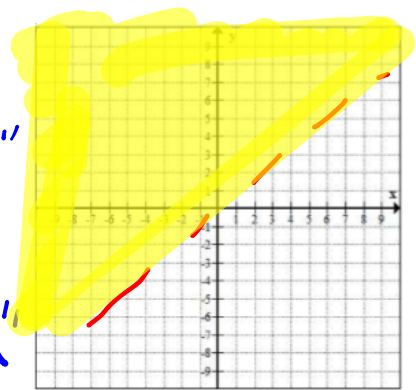
$$y \geq$$

"solid"
"above"
"touch"



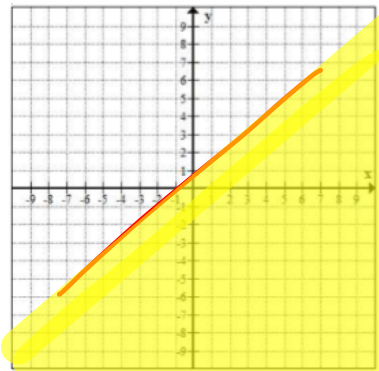
$$y >$$

"dotted"
"above"
"no touch"



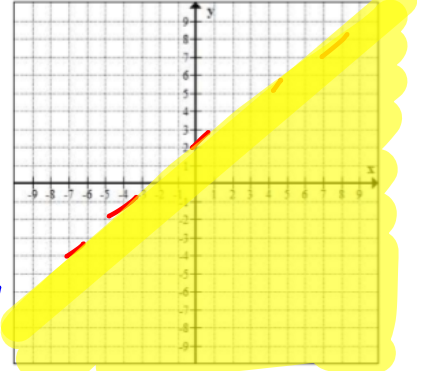
$$y \leq$$

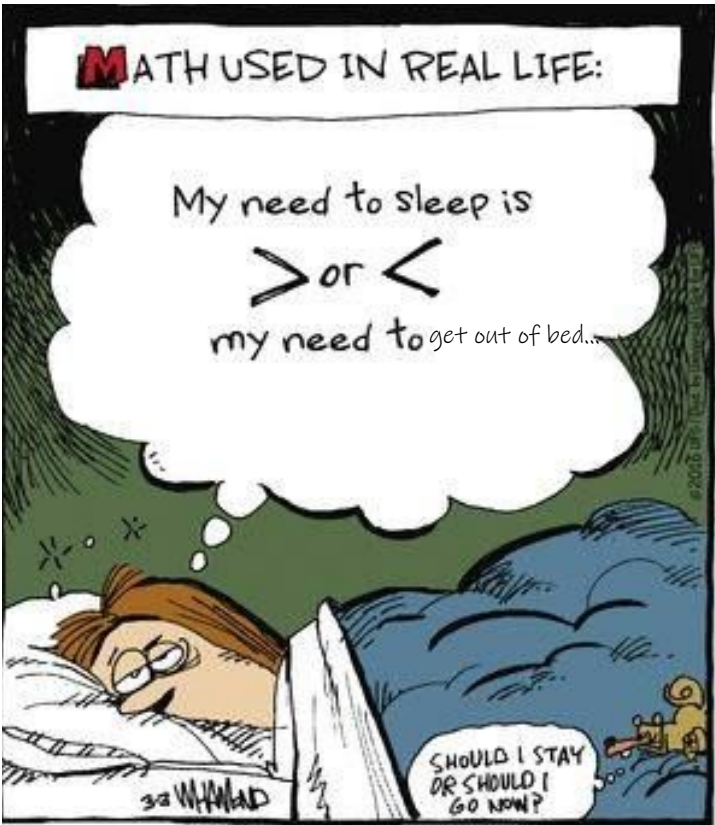
"solid"
"below"
"touch"



$$y <$$

"dotted"
"below"
"no touch"





Graphing Systems of Linear Inequalities

Steps:

- 1) Graph and shade the first inequality
- 2) Graph and shade the second inequality
- 3) Find solutions

	solid line	dashed line
shade above	\geq	$>$
shade below	\leq	$<$

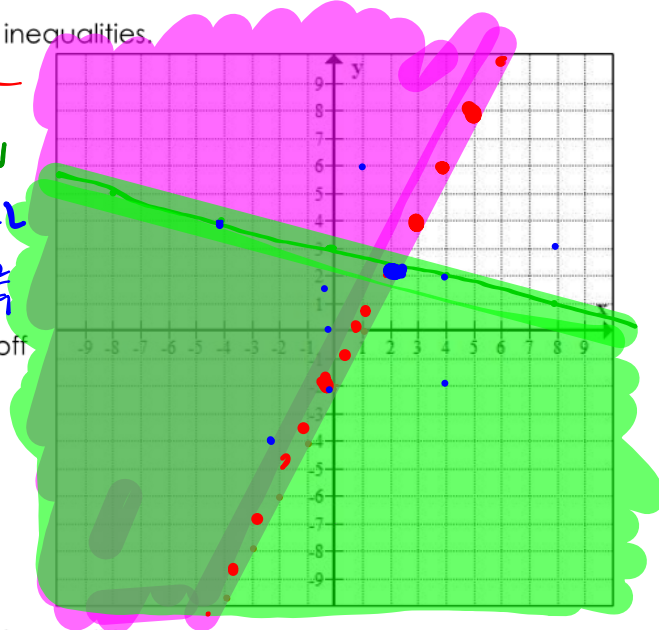
★ Remember, solutions lie in the double shaded region (on a solid line touching the double shaded region is okay, on a dashed line touching the double shaded region is not okay) ★

Example 1: Graph the following system of inequalities.

- $y > 2x - 2$ *dotted, above*
- $y \leq -\frac{1}{4}x + 3$ *solid, below*

$$\begin{aligned} 2x - 2 &= -\frac{1}{4}x + 3 \\ \frac{1}{4}x + 2 &= \frac{1}{4}x + 3 \\ \frac{1}{4}x &= 1 \\ x &= 4 \end{aligned}$$

$$\begin{aligned} \frac{9}{4}x &= 5 \\ x &= \frac{20}{9} \\ y &= \frac{40}{9} - 2 \\ y &= \frac{22}{9} \end{aligned}$$

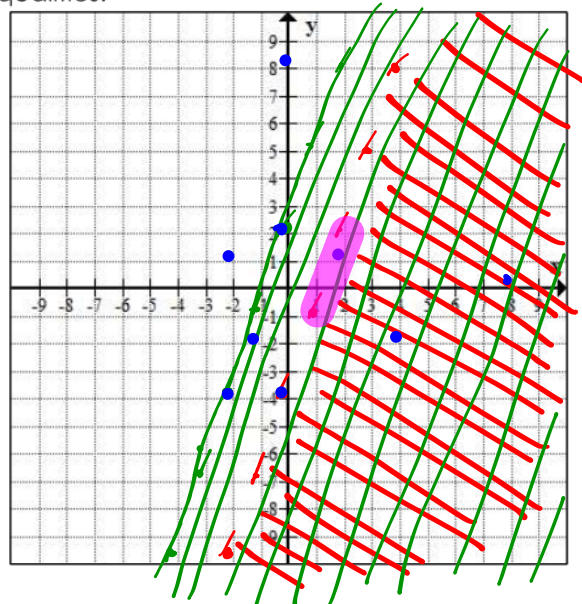


For the list of ordered pairs below, check off each ordered pair that is a solution to the system of equations.

- | | | |
|--|--|---|
| <input checked="" type="checkbox"/> (0,0) | <input checked="" type="checkbox"/> (0,2) | <input checked="" type="checkbox"/> (0,-2) |
| <input checked="" type="checkbox"/> (8,3) | <input checked="" type="checkbox"/> (4,-2) | <input checked="" type="checkbox"/> (-2,-4) |
| <input checked="" type="checkbox"/> (-4,4) | <input checked="" type="checkbox"/> (4,2) | <input checked="" type="checkbox"/> (1,6) |
- on solid* *on dotted*

Example 2: Graph the following system of inequalities.

- $y < 3x - 4$ *dotted, below*
- $y \leq 3x + 2$ *solid, below*



For the list of ordered pairs below, check off each ordered pair that is a solution to the system of equations.

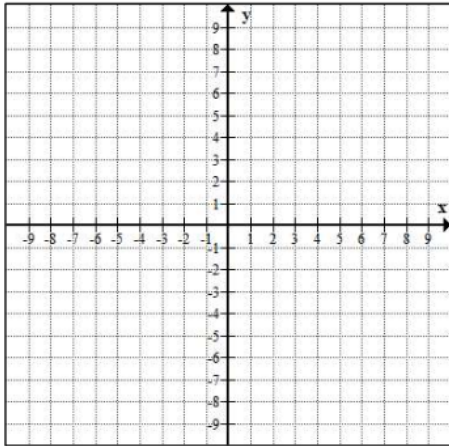
- | | | |
|---|--|---|
| <input checked="" type="checkbox"/> (0,2) | <input checked="" type="checkbox"/> (0,-4) | <input checked="" type="checkbox"/> (4,-2) |
| <input checked="" type="checkbox"/> (-1,-2) | <input checked="" type="checkbox"/> (-2,1) | <input checked="" type="checkbox"/> (-2,-4) |
| <input checked="" type="checkbox"/> (2,1) | <input checked="" type="checkbox"/> (8,0) | <input checked="" type="checkbox"/> (0,8) |



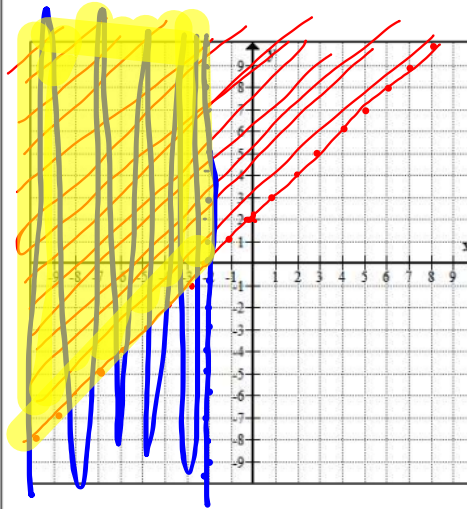


Graph each system of inequalities.

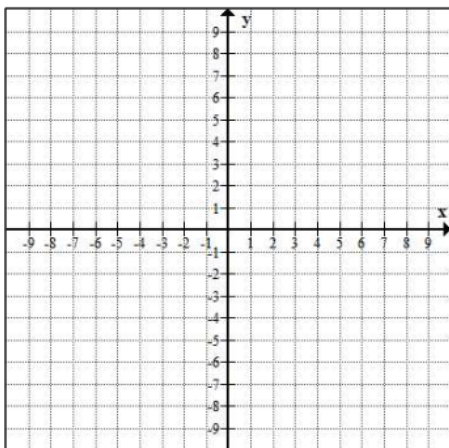
1) $x + y > 5$
 $2x - 4y > 4$



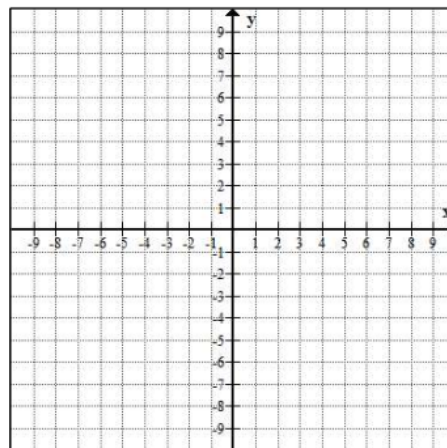
2) • $y \geq x + 2$ *Solid, above*
 • $x \leq -2$ *Solid only*
Left



3) $y \leq 2x + 1$
 $y > -2x + 5$



4) $y > 2x + 1$
 $y \leq -2x + 5$



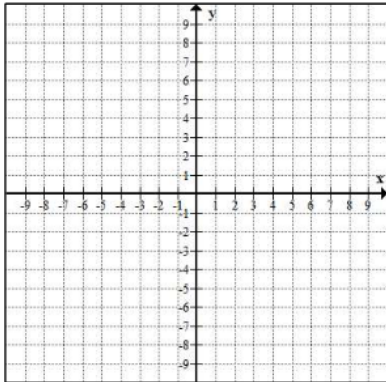
DON'T CROSS



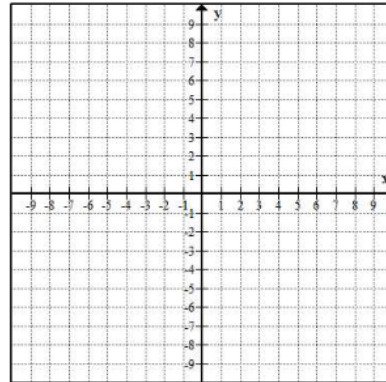
shutterstock.com · 1130777111

Graphing Systems of Inequalities Practice

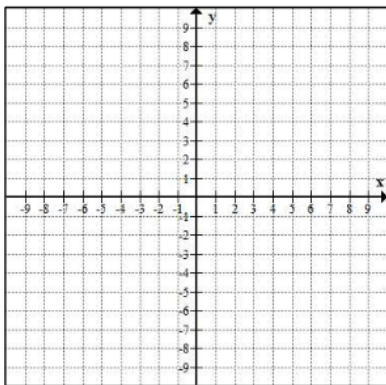
1) $y > 4x - 3$
 $y \geq -2x + 3$



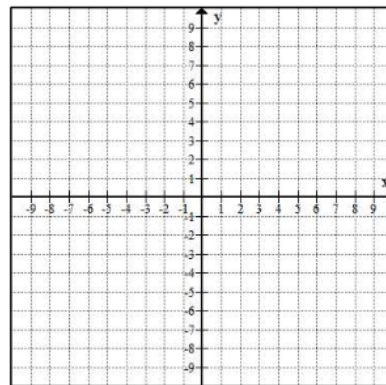
2) $y \geq -5x + 3$
 $y > -2$



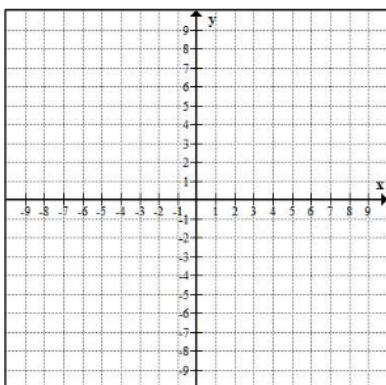
3) $y < 3$
 $y \leq -x + 1$



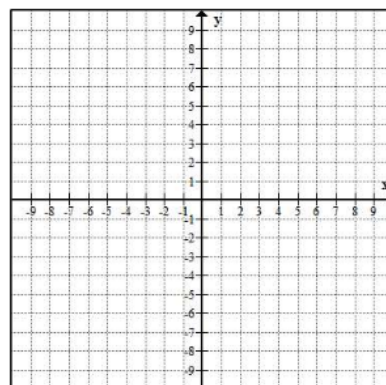
4) $y \geq x - 3$
 $y \geq -x - 1$



5) $x \leq -3$
 $5x + 3y \geq -9$



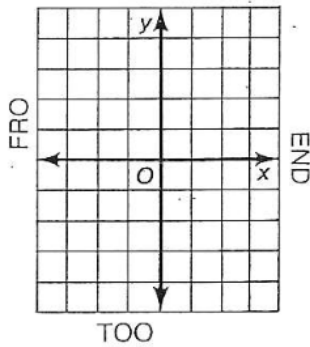
6) $4x - 3y < 9$
 $x + 3y > 6$



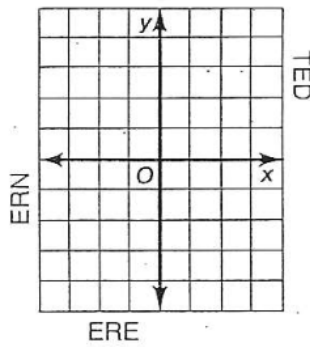
What did the Toothless Old Termite Say When He Entered a Tavern?

Graph each pair of inequalities below and indicate the solution set of the system with shading. The shading, if extended, would cover a set of three letters. Print these letters in the three boxes at the bottom of the page that contain the exercise number.

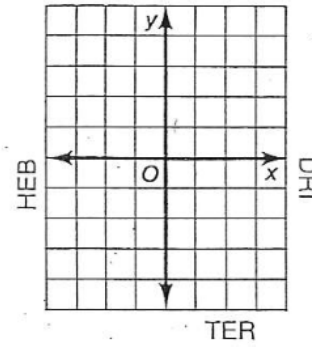
① $y \leq x - 1$
 $y \geq -3$



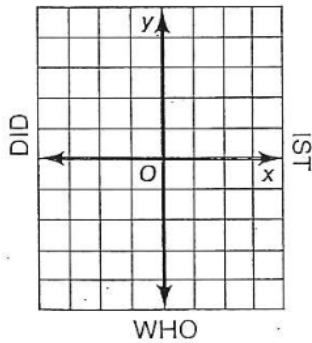
② $x \leq 2$
 $y \leq \frac{2}{3}x - 1$



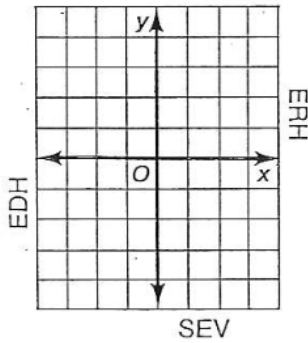
③ $y < -x + 1$
 $y > \frac{1}{2}x - 2$



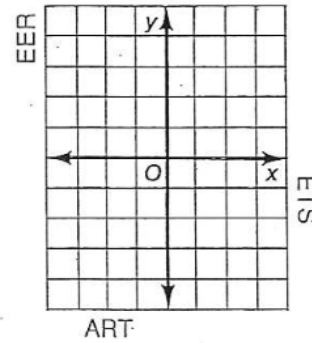
④ $y < x$
 $3x + 2y > 4$



⑤ $x - 3y \leq 12$
 $x > 2$



⑥ $y \leq 1$
 $2x + y < 1$



4	4	4	3	3	3	6	6	6	1	1	1	5	5	5	2	2	2
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