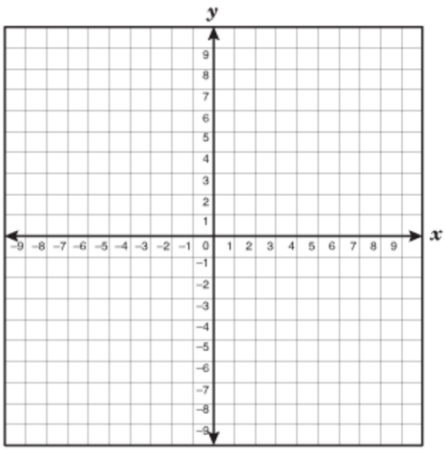
Graphing Linear Inequalities

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	$\leq$	$<$

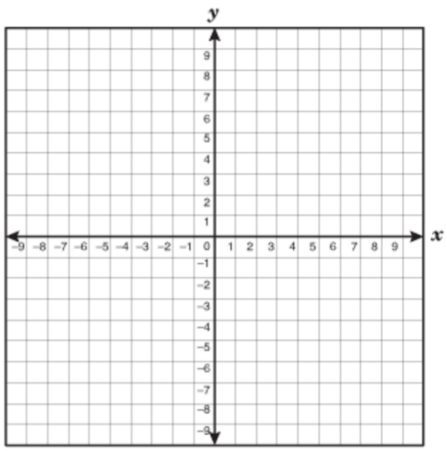
1) $y < -\frac{1}{2}x - 2$



Solutions:

- ☐ $(-9, 2)$
- ☐ $(-5, 0)$
- ☐ $(0, -2)$
- ☐ $(3, -2)$

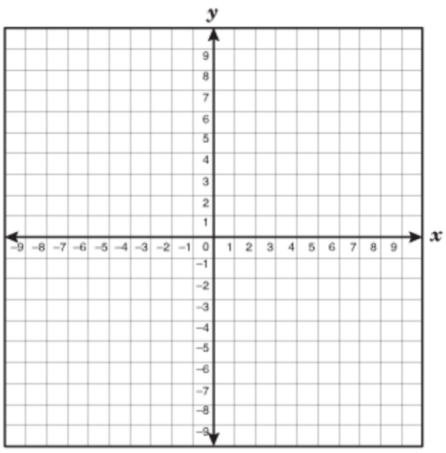
2) $y \geq 2x - 5$



Solutions:

- ☐ $(-2, -9)$
- ☐ $(0, -4)$
- ☐ $(3, -2)$
- ☐ $(5, -10)$

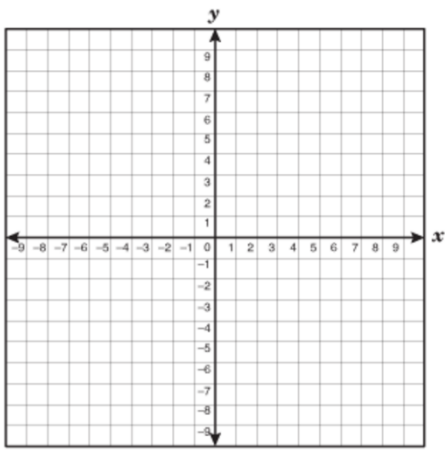
3) $2x + 3y \leq 9$



Solutions:

- ☐ $(-7, 0)$
- ☐ $(0, 7)$
- ☐ $(7, 0)$
- ☐ $(0, -7)$

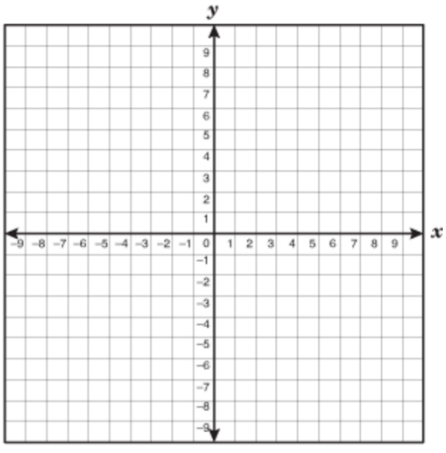
4) $x - y > 4$



Solutions:

- ☐ $(-4, 0)$
- ☐ $(0, 4)$
- ☐ $(0, -4)$
- ☐ $(4, 0)$

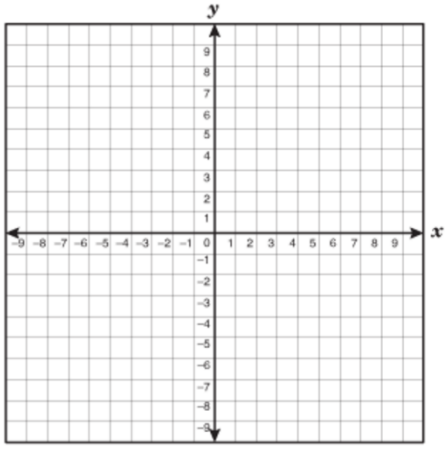
5) $4x - 2y < -6$



Solutions:

- ☐ $(5, 1)$
- ☐ $(1, 5)$
- ☐ $(-5, -1)$
- ☐ $(-1, 5)$

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



Solutions:

- ☐ $(-2, 3)$
- ☐ $(-3, -2)$
- ☐ $(0, 0)$
- ☐ $(2, 5)$

Graphing Systems of Linear Inequalities

Steps:

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

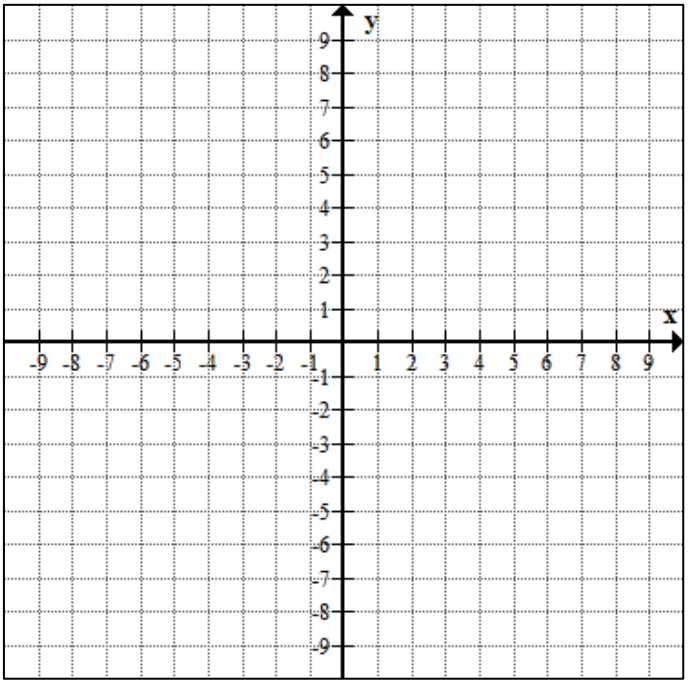
	solid line	dashed line
shade above	$\geq$	$>$
shade below	$\leq$	$<$

★ 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.

$y > 2x - 2$

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



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

□ $(0,0)$ □ $(0,2)$ □ $(0,-2)$

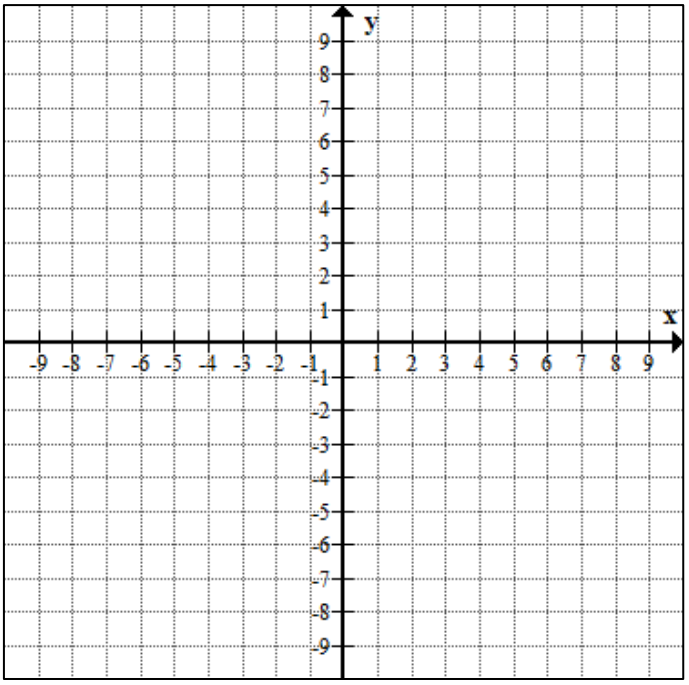
□ $(8,3)$ □ $(4,-2)$ □ $(-,2-4)$

□ $(-4,4)$ □ $(4,2)$ □ $(1,6)$

Example 2: Graph the following system of inequalities.

$y < 3x - 4$

$y \leq 3x + 2$



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

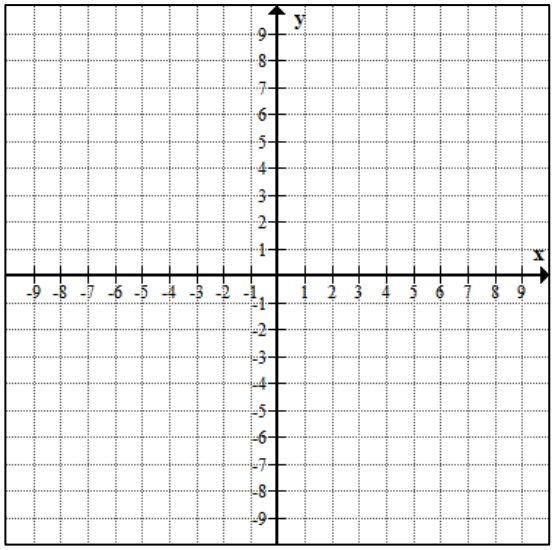
□ $(0,2)$ □ $(0,-4)$ □ $(4,-2)$

□ $(-1,-2)$ □ $(-2,1)$ □ $(-,2-4)$

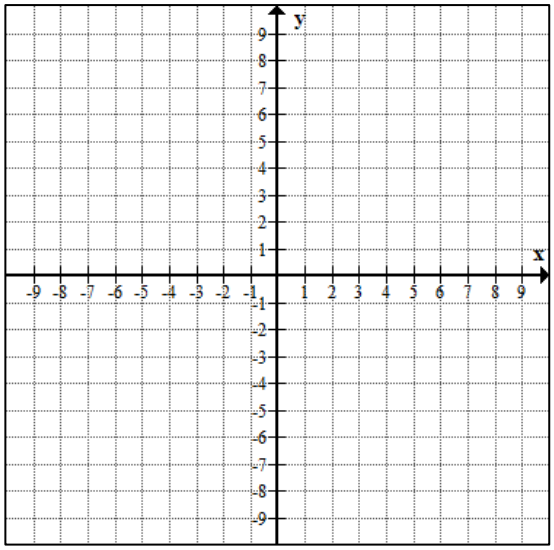
□ $(2,1)$ □ $(8,0)$ □ $(0,8)$

Graph each system of inequalities.

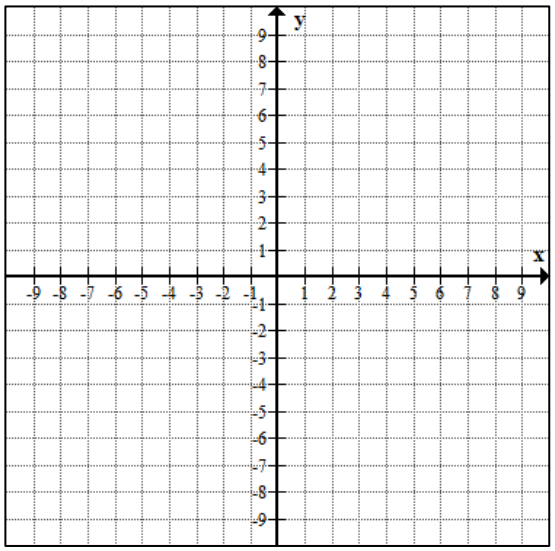
1) $x + y > 5$
$2x - 4y > 4$



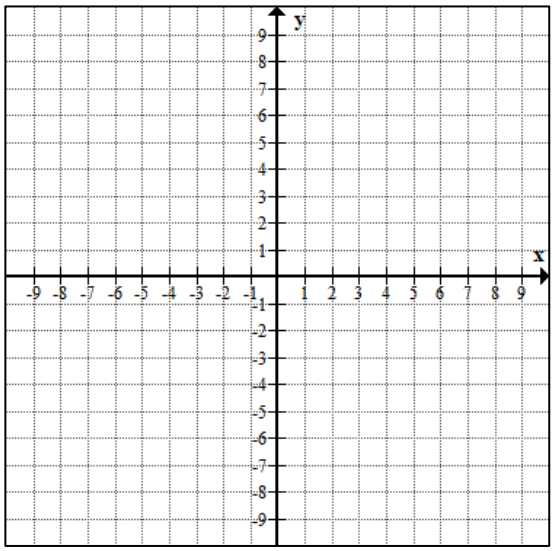
2) $y \geq x + 2$
$x \leq -2$



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



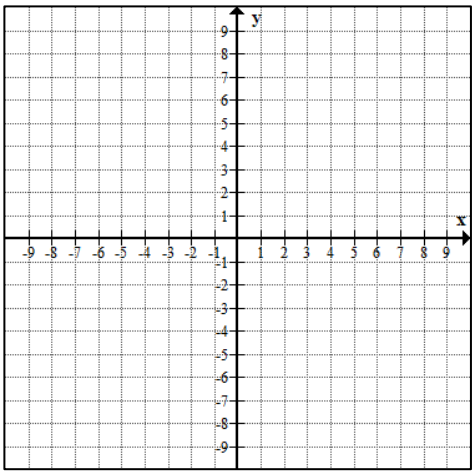
4) $y > 2x + 1$
$y \leq -2x + 5$



Graphing Systems of Inequalities Practice

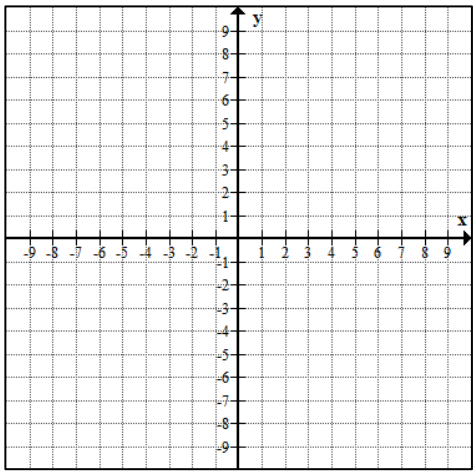
1) $y > 4x - 3$

$y \geq -2x + 3$



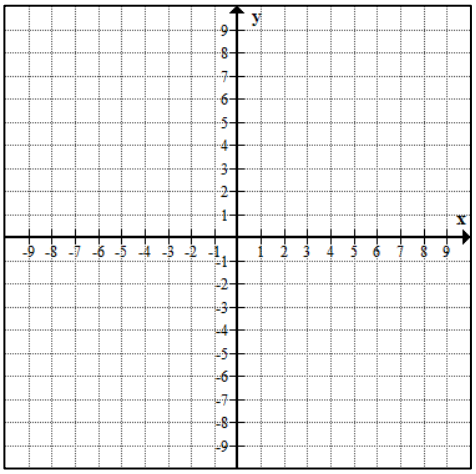
2) $y \geq -5x + 3$

$y > -2$



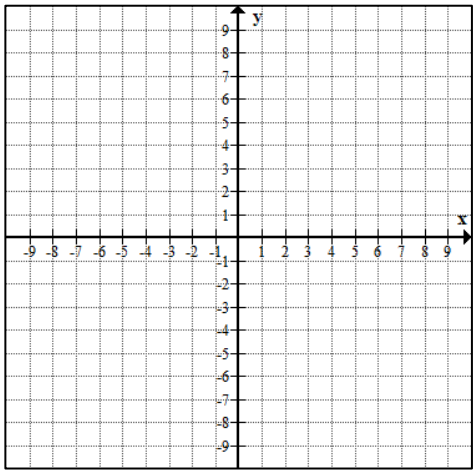
3) $y < 3$

$y \leq -x + 1$



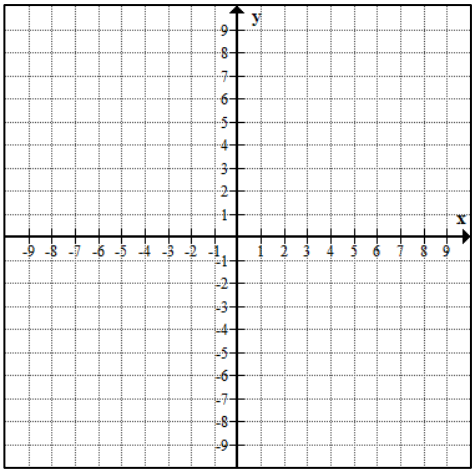
4) $y \geq x - 3$

$y \geq -x - 1$



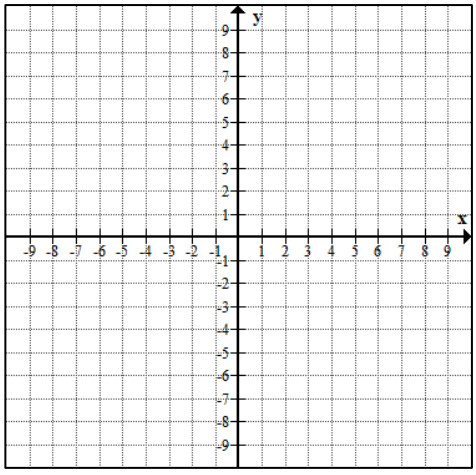
5) $x \leq -3$

$5x + 3y \geq -9$



6) $4x - 3y < 9$

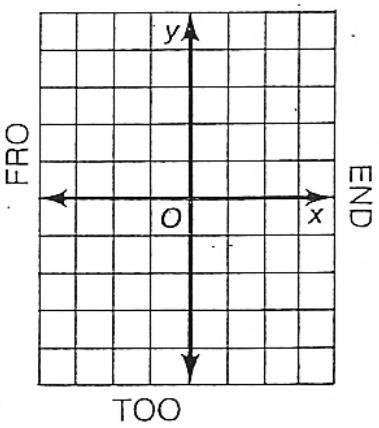
$x + 3y > 6$



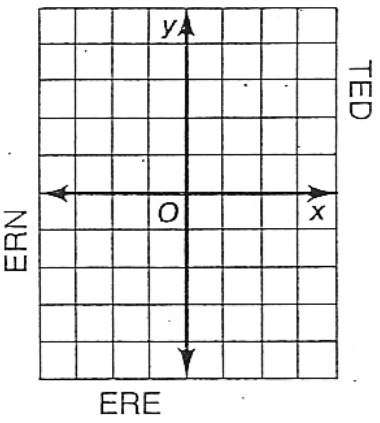
What did the Toothless Old Termite Say When He Entered a Tavern?

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.

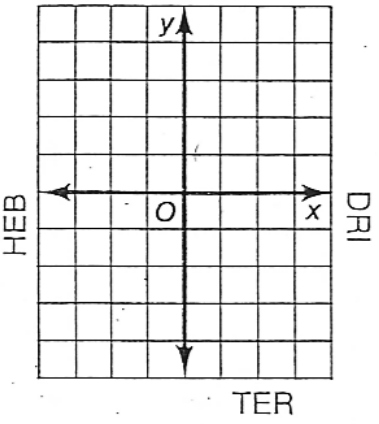
① $y \leq x - 1$
$y \geq -3$



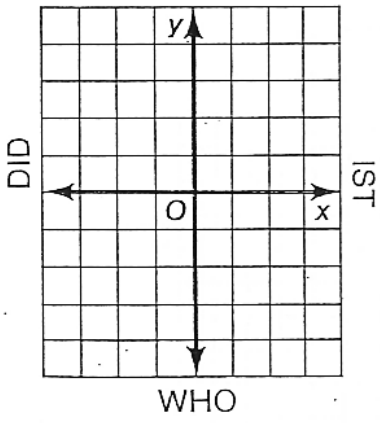
② $x \leq 2$
$y \leq \frac{2}{3}x - 1$



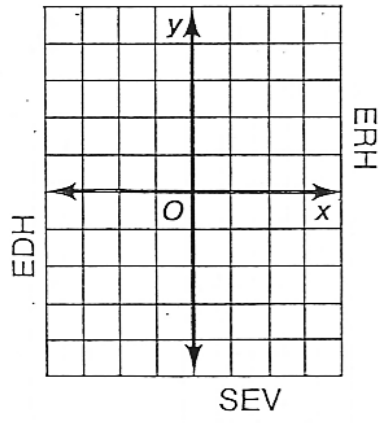
③ $y < -x + 1$
$y > \frac{1}{2}x - 2$



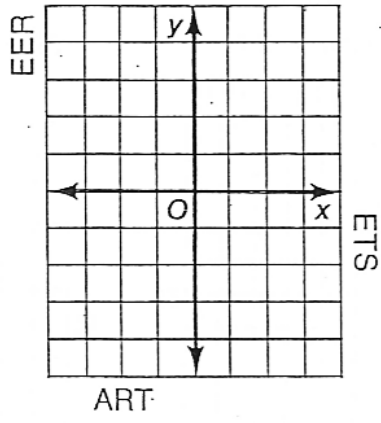
④ $y < x$
$3x + 2y > 4$



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