SOLUTIONS/QUESTIONS FROM THE HOMEWORK???

HE HAS NO PROPER TEA

He has no proper tea (property).

Page 158

SHE HAD A BUM STEER

HW Questions

⑧ $2x - 2y + 5 = 0$

$$-2y = -2x - 5$$
$$\frac{-2y}{-2} = \frac{-2x}{-2} - \frac{5}{-2}$$

$$y = \frac{1}{1}x + 2.5$$

⑧ $2x - 7 = 0$

$$\frac{\cancel{2}x}{\cancel{2}} = \frac{7}{2}$$

$$x = 3.5$$
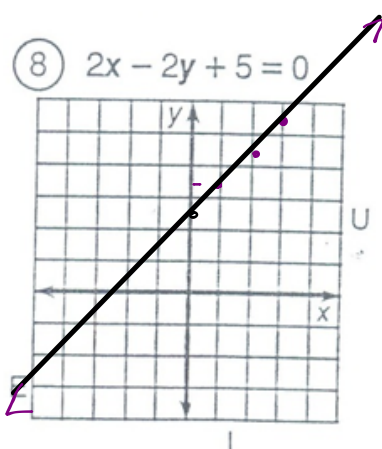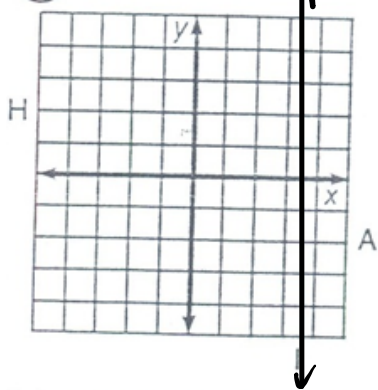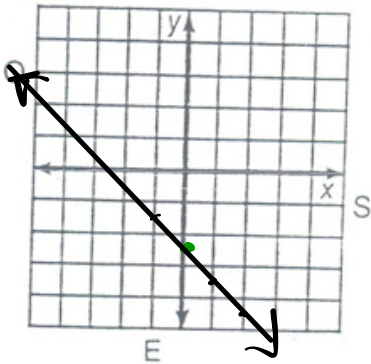
⑨ $-2x = 2y + 5$

$$\frac{-2}{-2}y = \frac{2}{-2}x + \frac{5}{-2}$$

$$y = -x - 2.5$$

OR

$$-2x = 2y + 5$$

$$\frac{-2}{2}x - \frac{5}{2} = \frac{2}{2}y$$

$$-x - 2.5 = y$$

$$y = -x - 2.5$$

Different

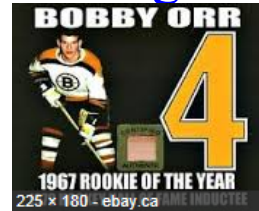$$m = \frac{-1}{1}$$

$$m = \frac{1}{-1}$$

Linear Inequalities:

Inequality sign - could be one of the following...

LESS THAN
OR EQUAL TO

LESS THAN

$>$ $<$ $>$ $\leq$ $\neq$

GREATER THAN

GREATER THAN
OR EQUAL TO

NOT EQUAL TO

When solving an in-equation, all the steps are the same EXCEPT when it comes to isolating...

4 $\boxed{<}$ 11 , fill in the box.

VS

Now divide both by -1

-4 $\boxed{>}$ -11, fill in the box.

#11

RULE: If you multiply or divide by a negative, reverse the inequality sign!!!

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NOTES - Graphing a Linear Inequation.docx

When the solution set to a linear inequality is continuous and the sign does not include equality, use a dashed line for the boundary and shade the solution region.
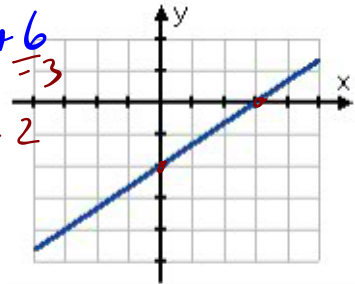
Example: Graph the solution to: $2x - 3y < 6$.

$2x - 3y = 6$
$-3y = -2x + 6$
$\frac{-3y}{-3} = \frac{-2x}{-3} + \frac{6}{-3}$
$y = \frac{2}{3}x - 2$

First, solve for the equation in the slope – y intercept form ($y = mx + b$).

$2x - 3y < 6$
$-3y < -2x + 6$
$y > (2/3)x - 2$

STEP 1: Graph the boundary line

Find the "equals" part, which is the line $y = (2/3)x - 2$. It looks like this:

But this example is a **strict** inequality. That is, it's only "y greater than." We denote strict inequalities on the number line (such as $x > 5$) by using an open dot instead of a closed dot. In the case of these linear inequalities, the notation for a strict inequality is a dashed line. So the boundary line of the solution region actually looks like this:
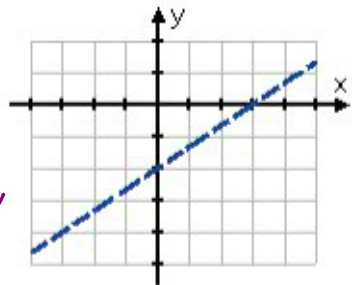
STEP 2: Decide on dashed or solid $\leq$ or $\geq$

$<$ or $>$

By using a dashed line, we can still identify the boundary line, but the dashed line indicates that the boundary line isn't included in the solution. Since this is a "y greater than" inequality, we will shade above the line, so the solution looks like this:

$(0,0)$
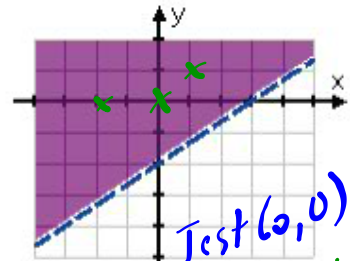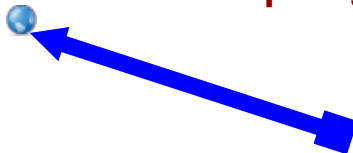
STEP 3: Pick a 'test point' and verify

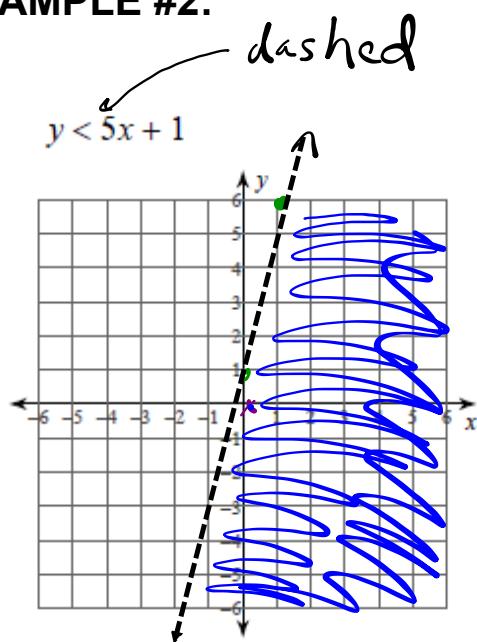STEP 4: Shade

* Test in the original inequation.

Test $(0,0)$

$2x - 3y < 6$

LS | RS
$2(0) - 3(0)$ $<$ 6
0 | yes

VIDEO - Graphing Inequalities

Click HERE to watch the video!!!

EXAMPLE #2:

dashed

$y < 5x + 1$

$y = 5x + 1$

Test $(0, 0)$

$y < 5x + 1$

LS	RS
0	$5(0) + 1$
	< 1
	yes

EXAMPLE #3: ← solid boundary

$$3y \leq -5x$$
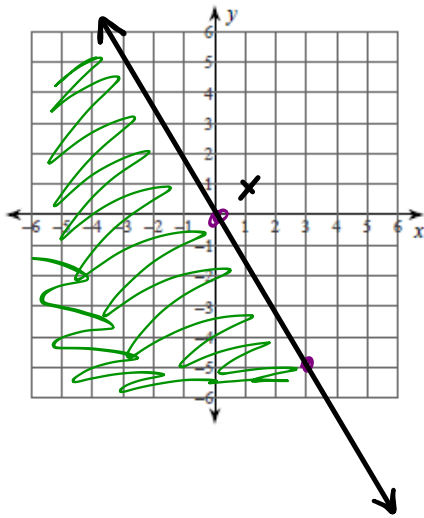
$$3y = -5x$$
$$\frac{3y}{3} = \frac{-5x}{3}$$

$$y = -\frac{5}{3}x$$

↑ y int = 0

Test (1, 1)

$$3y \leq -5x$$

LS	RS
3(1)	-5(1)
3	≤ -5

Not a solution

EXAMPLE #4:

$x \geq 4$
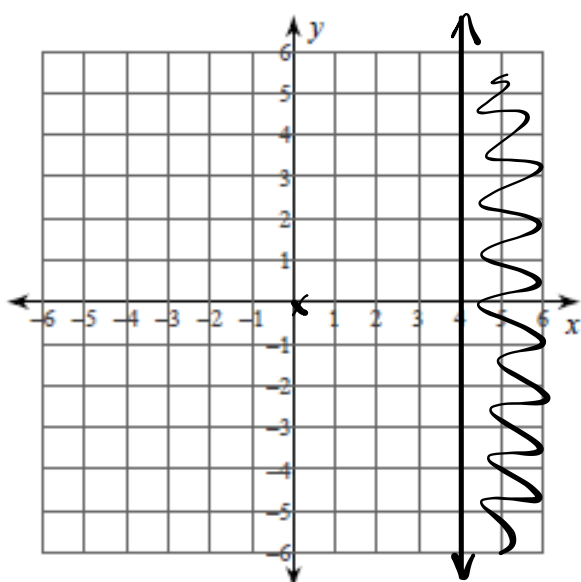
$x = 4$

x vertical

Test (0,0)

$x \geq 4$

LS	RS
0 $\geq$ 4	No

EXAMPLE #5...

$$2x + 3y - 6 < 0$$

Test

$$\frac{3y}{3} = -\frac{2}{3}x + \frac{6}{3}$$

$$y = -\frac{2}{3}x + 2$$

CS < RS

$2(0) + 3(0) - 6$	0
-6	yes
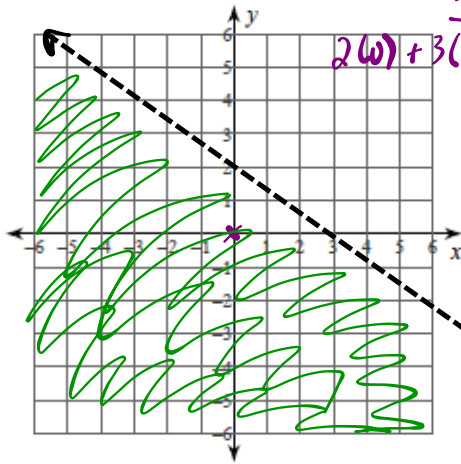
Test (0, 2)

CS < RS

$2(0) + 3(2) - 6$	0
0	0

Not a solution.

HOMEWORK...

Puzzle Worksheet - Graphing Linear Inequalities with Two Variables.pdf

Number of the exercise.

② $x + y > 1$
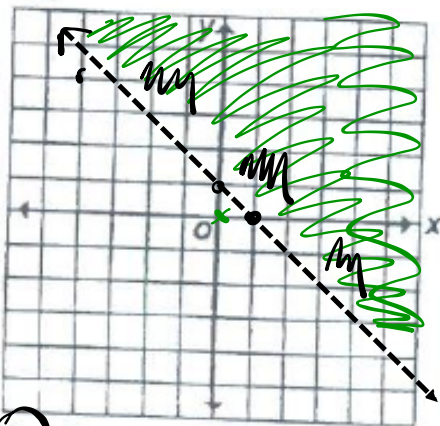
(S) Quadrants I, II, IV;
   excludes boundary line.

B All four quadrants;
   includes boundary line.

F Quadrants I, III, IV;
   excludes boundary line.
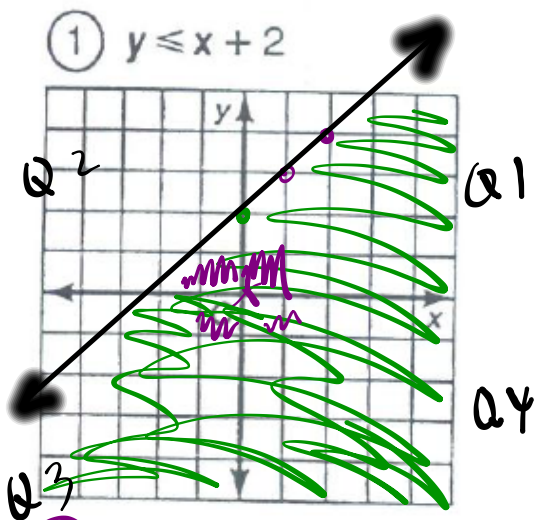
$x + y = 1$

$y = -x + 1$

Test $(0,0)$

$LS > RS$

$\dfrac{0 + 0 \,\big|\, 1}{0}$ ≯ 1   No

① $y \le x + 2$

Q2

Q1

Q3

Q4

Ⓐ All four quadrants;
   includes boundary line.

I Quadrants I, II, IV:
   includes boundary line

$y = \underline{1}x + 2$
$\ \ 1$

Test $(0,0)$

LS $\le$ RS
_____
0 | 0 + 2
  ≤ 2 yes

Attachments

NOTES - Graphing a Linear Inequation.docx

Puzzle Worksheet - Graphing Linear Inequalities with Two Variables.pdf