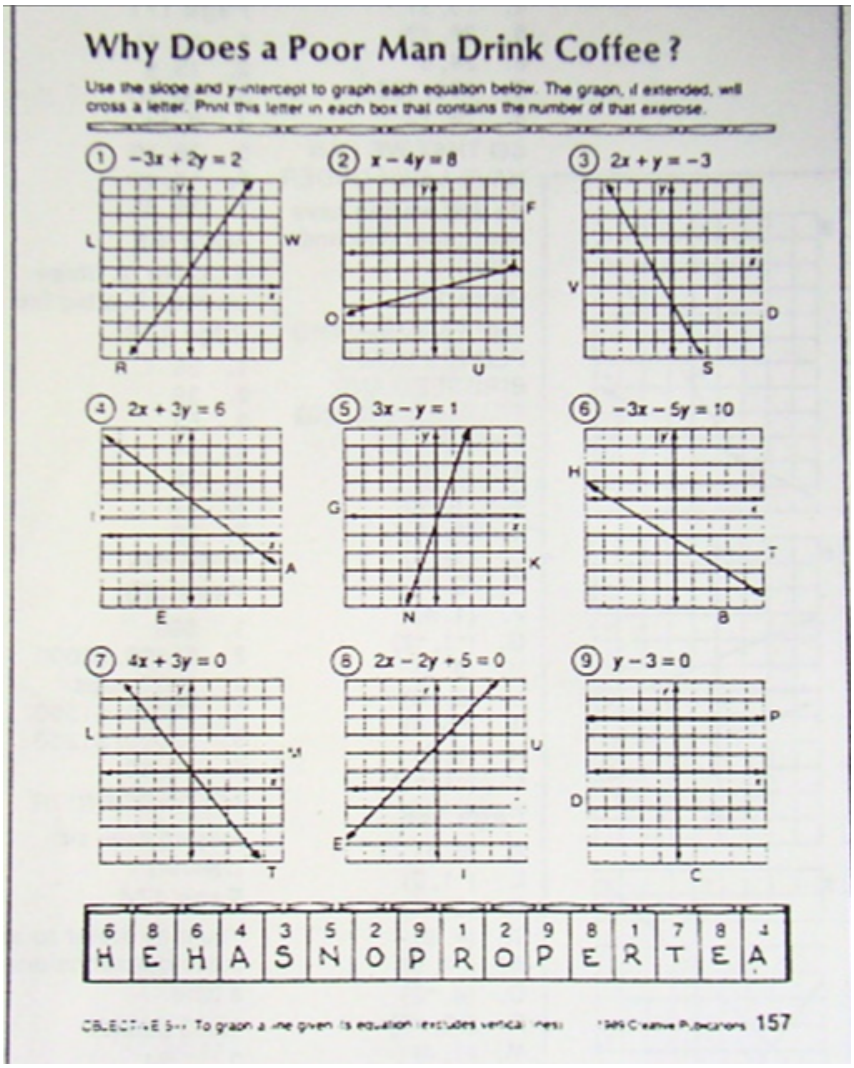
SOLUTIONS/QUESTIONS FROM THE HOMEWORK???



Why Does a Poor Man Drink Coffee?

Use the slope and y-intercept to graph each equation below. The graph, if extended, will cross a letter. Print this letter in each box that contains the number of that exercise.

① $-3x + 2y = 2$ ② $x - 4y = 8$ ③ $2x + y = -3$

④ $2x + 3y = 6$ ⑤ $3x - y = 1$ ⑥ $-3x - 5y = 10$

⑦ $4x + 3y = 0$ ⑧ $2x - 2y + 5 = 0$ ⑨ $y - 3 = 0$

6	8	6	4	3	5	2	9	1	2	9	8	1	7	8	4
H	E	H	A	S	N	O	P	R	O	P	E	R	T	E	A

OBJECTIVE 5: To graph a line given its equation (excludes vertical lines) ©1985 Creative Publications 157

HE HAS NO PROPER TEA

He has no proper tea (property).

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SHE HAD A BUM STEER

Linear Inequalities:

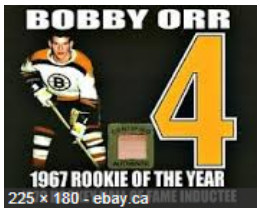
Inequality sign - could be one of the following...

??? LESS THAN LESS THAN OR EQUAL TO

$>$ GREATER THAN $<$ $\geq$ GREATER THAN OR EQUAL TO $\leq$ $\neq$ NOT EQUAL TO

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

4 $<$ 11 , fill in the box.



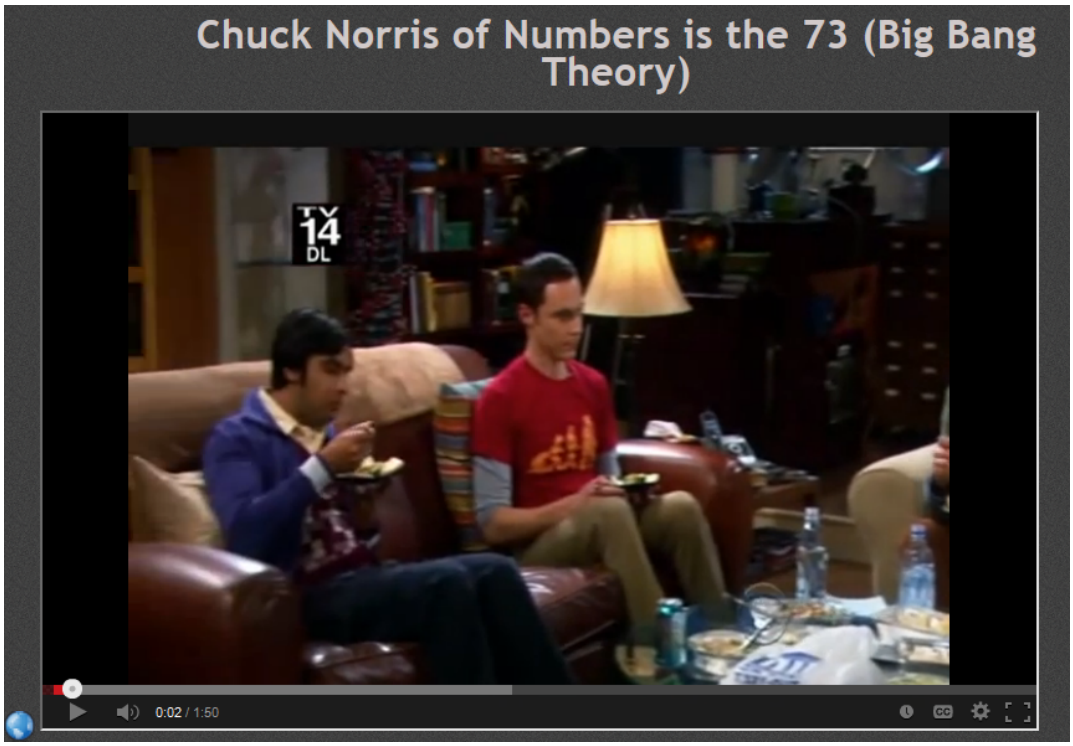
VS

Now divide both by -1

-4 $>$ -11, fill in the box.

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

Favorite Numbers... What's Sheldon's???



NOTES - Graphing a Linear Inequation.docx

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

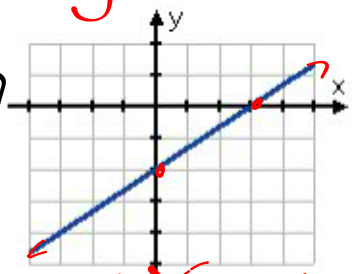
When the solution set to a linear inequality is continuous and the sign does not include equality, use a dashed line for the boundary and shade the solution region.

Example: Graph the solution to: $2x - 3y < 6$.

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

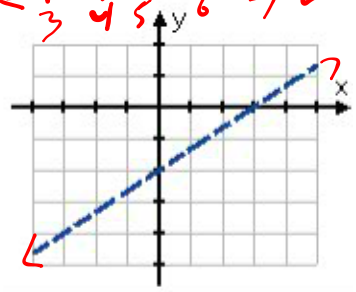
$2x - 3y < 6$
$-3y < -2x + 6$
$y > (2/3)x - 2$

STEP 1: Graph the boundary line



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

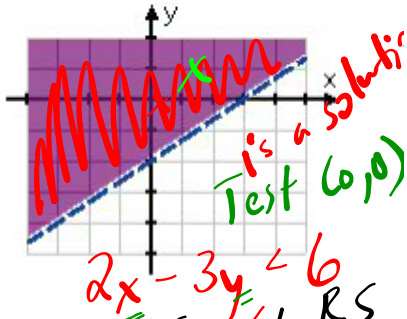
But this example is a **strict** inequality. That is, it's only "*y* greater than." We denote strict inequalities on the number line (such as $x > 5$) by using an open dot instead of a closed dot. In the case of these linear inequalities, the notation for a strict inequality is a dashed line. So the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



STEP 2: Decide on dashed or solid → ≤ OR ≥

> 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:



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

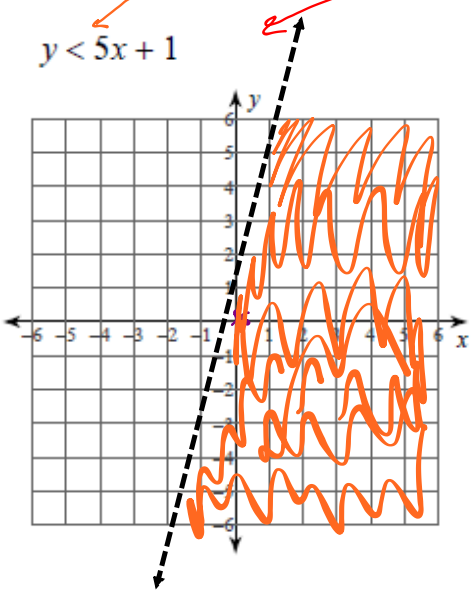
STEP 4: Shade

$2x - 3y < 6$
LS RS
$2(0) - 3(0)$ 6
0 True

VIDEO - Graphing Inequalities

Click HERE to watch the video!!!

EXAMPLE #2:



dashed

subs

Test (0,0)

$0 < 0 + 1$

1

True

$y = \frac{5}{1}x + 1$

rise / run

y int

Test (0,1)

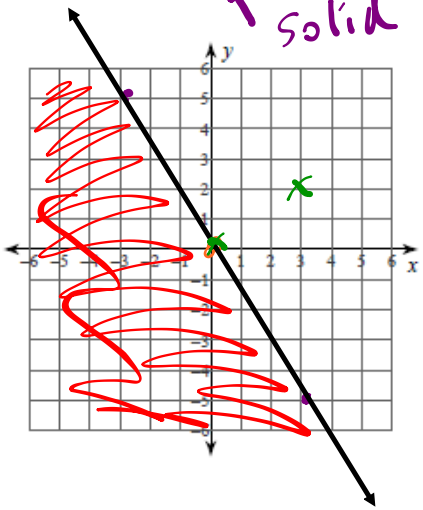
$1 < 0 + 1$

1

EXAMPLE #3:

$3y \leq -5x$

solid



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

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

Ups 5 OR Down 5
Left 3 Right 3

? Hint (0,0)

Test (3,2)

LS $\leq$ RS

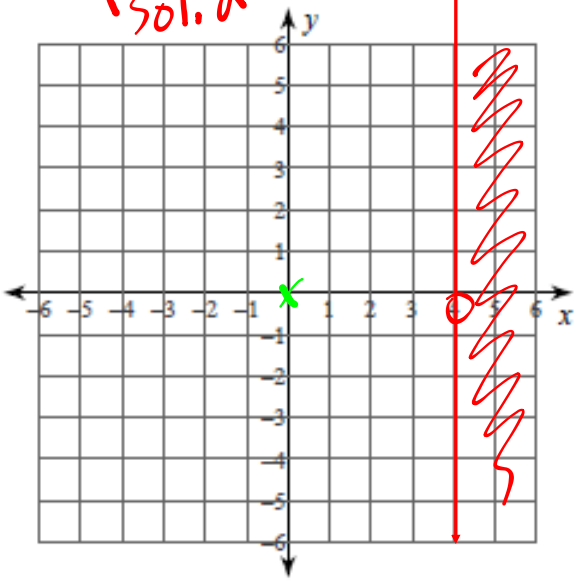
$3(2)$	$-5(3)$
6	-15

False

EXAMPLE #4:

$x \geq 4$

solid



$x = 4$

* vertical

Test (0,0)

$x \geq 4$

LS	RS
$0 \geq$	4 False

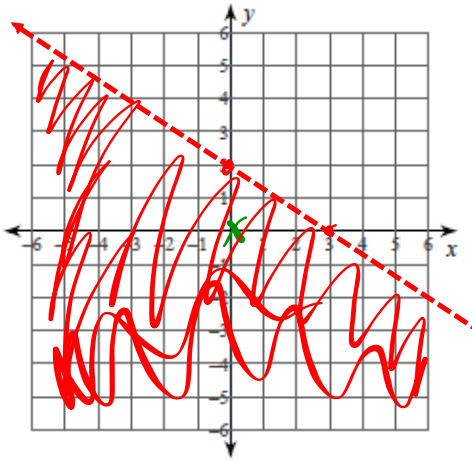
EXAMPLE #5...

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

dashed

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

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



Test (0,0) is a solution

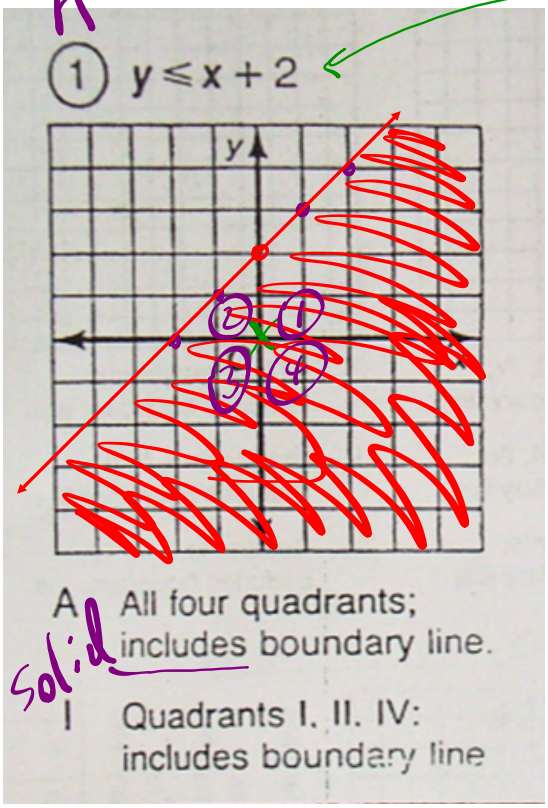
LS < RS

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

-6 True

HOMEWORK...

Puzzle Worksheet - Graphing Linear Inequalities with Two Variables.pdf



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

Test (0,0)

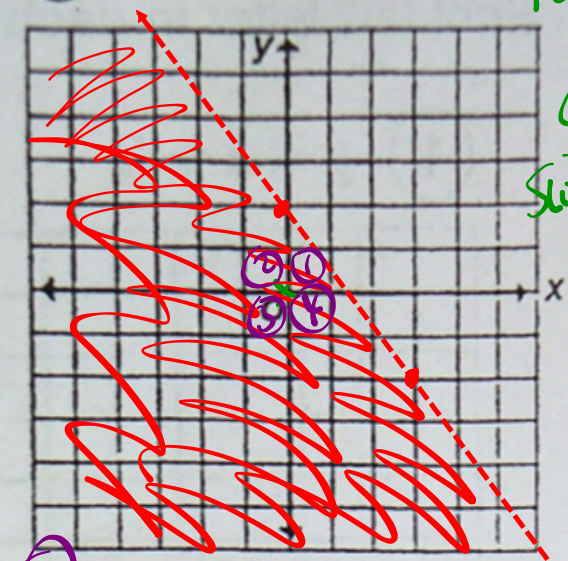
$LS \leq RS$

$0 \leq 0 + 2$

2

True

8 $5x + 3y < x + 6$



F All four quadrants; excludes boundary line.

P Quadrants I, II, III; excludes boundary line.

M Quadrants I, III, IV; excludes boundary line.

dashed

Test (0,0)

$5x + 3y < x + 6$

LS < RS

$5(0) + 3(0) < 0 + 6$

$0 < 6$

True

$5x + 3y = x + 6$

$3y = -5x + x + 6$

$\frac{3y}{3} = \frac{-4x}{3} + \frac{6}{3}$

$y = -\frac{4}{3}x + 2$

Attachments

NOTES - Graphing a Linear Inequation.docx

Puzzle Worksheet - Graphing Linear Inequalities with Two Variables.pdf