

099 § 3.4 #51-15, 21-39

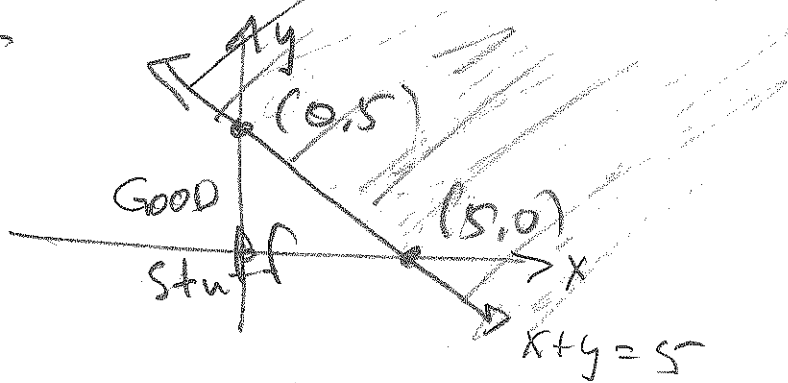
#51-16 Graph the solution set.

① $x + y < 5$

x	y
0	5
5	0

$0 + 0 < 5?$

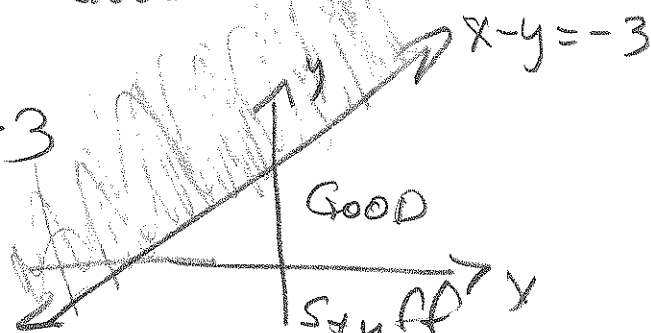
Yes. $(0,0)$ Good



③ $x - y \geq -3$

x	y
0	3
-3	0

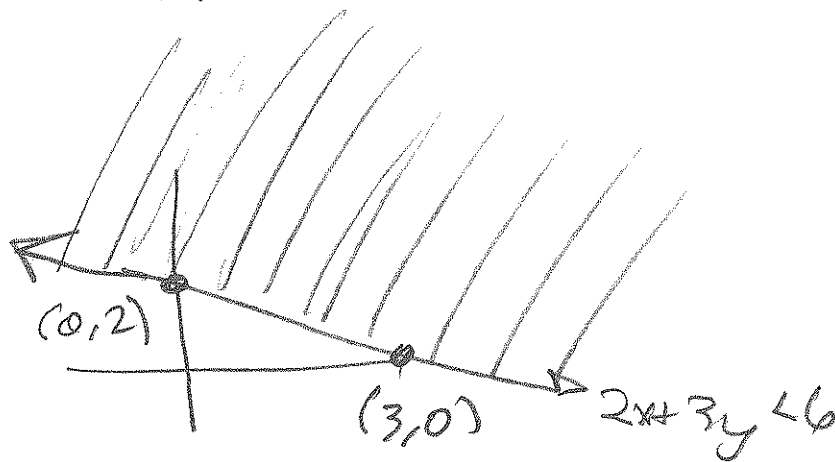
$0 \geq -3?$ Yes



⑤ $2x + 3y < 6$

x	y
0	2
3	0

$0 < 6?$
Yes

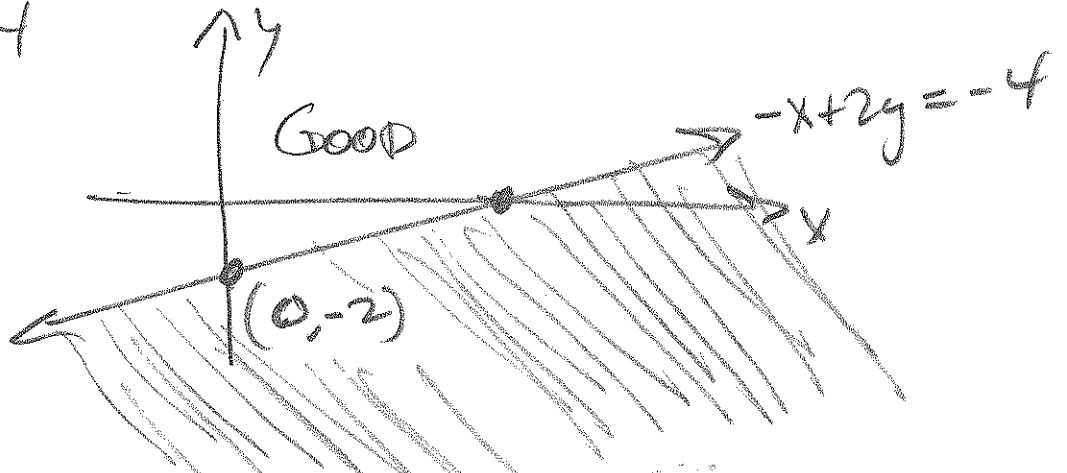


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7) $-x + 2y > -4$

x	y
0	-2
4	0

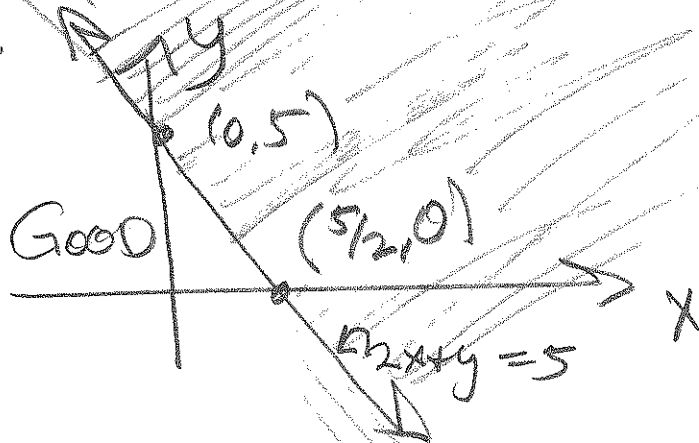
$0 > -4?$
Yes



9) $2x + y < 5$

x	y
0	5
$\frac{5}{2}$	0

$0 < 5?$
Yes



14) $y < 2x - 1$

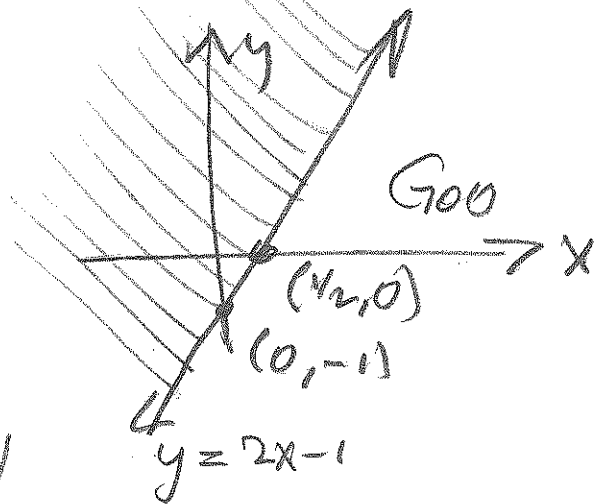
x	y
0	-1
$\frac{1}{2}$	0

$y = 2x - 1 = 0$
 $2x = 1$
 $x = \frac{1}{2}$

$0 < 2(0) - 1?$

$0 < -1?$

No. (0,0) Bad!



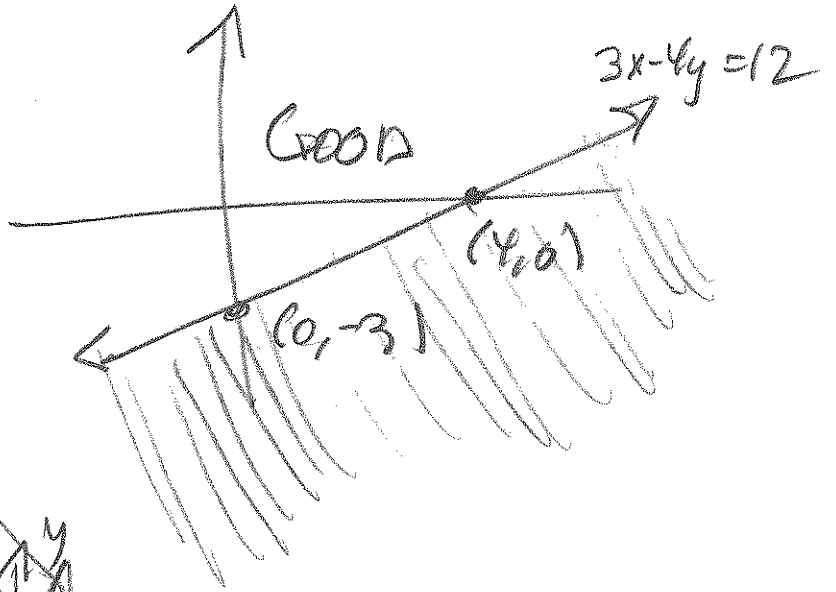
099 5/24 #5 13, 15, 21-39

(13) $3x - 4y < 12$

x	y
0	-3
4	0

$0 < 12?$

Yes (0,0) good

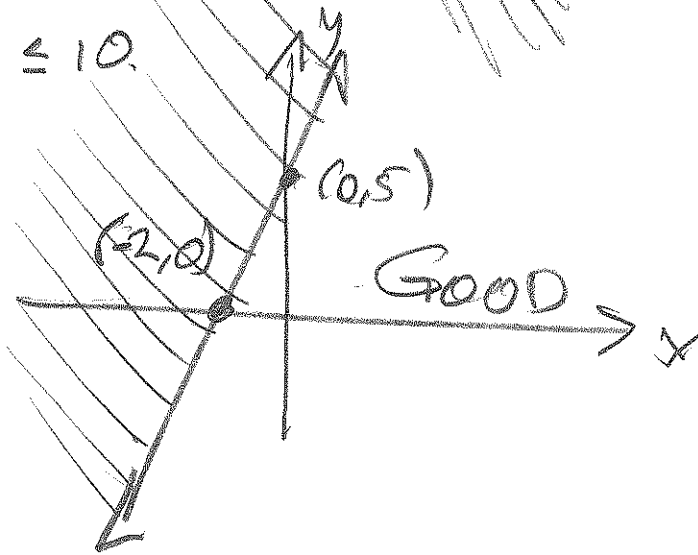


(15) $-5x + 2y \leq 10$

x	y
0	5
-2	0

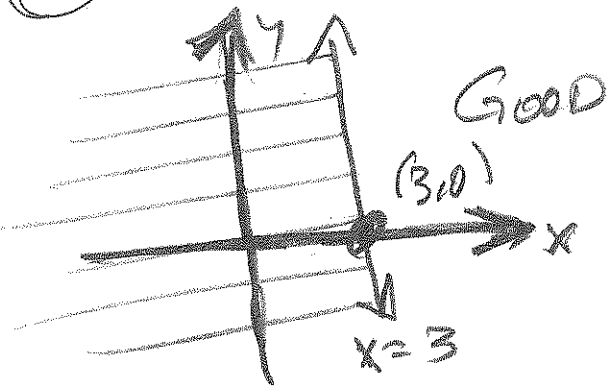
$0 \leq 10?$

Yes



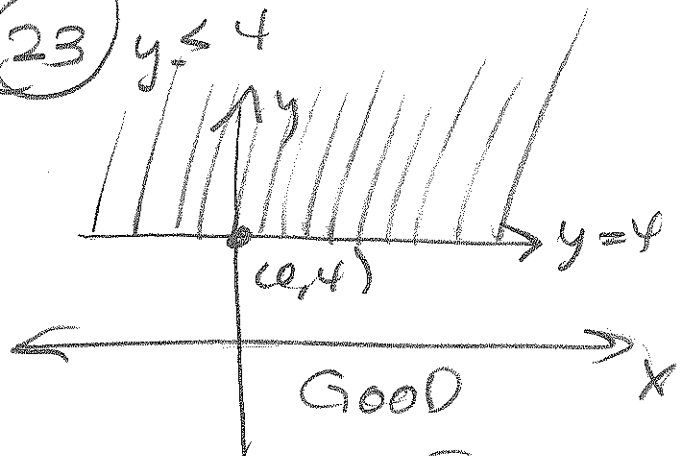
#5 21-40 Graph the inequalities!

(21) $x \geq 3$



$0 \geq 3?$ No

(23) $y \leq 4$



$0 \leq 4?$ Yes

099 5'3y #s 25-39

(25) $y < 2x$

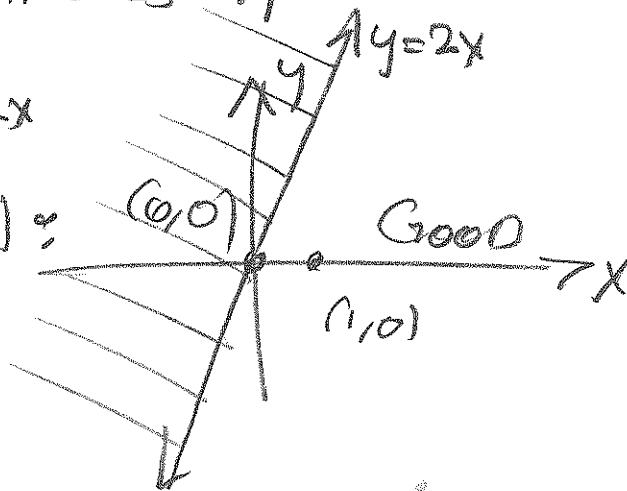
Test (1,0):

$0 < 2(1)?$

$0 < 2?$

Yes

(1,0) is Good

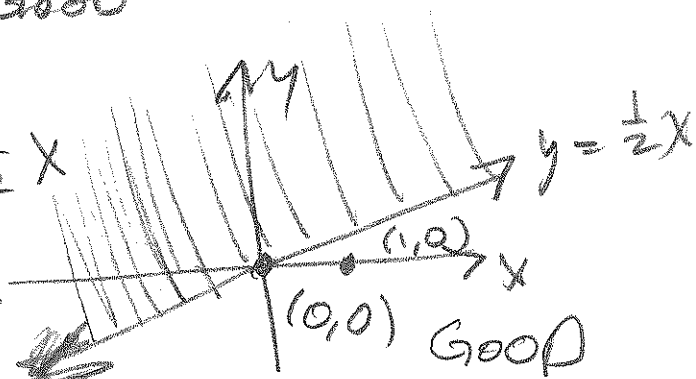


(27) $y \geq \frac{1}{2}x$

Test (1,0)

$0 \geq \frac{1}{2}(1)?$

Yes. (1,0) Good



(29) $y \geq \frac{3}{4}x - 2$

0	-2
$\frac{8}{3}$	0

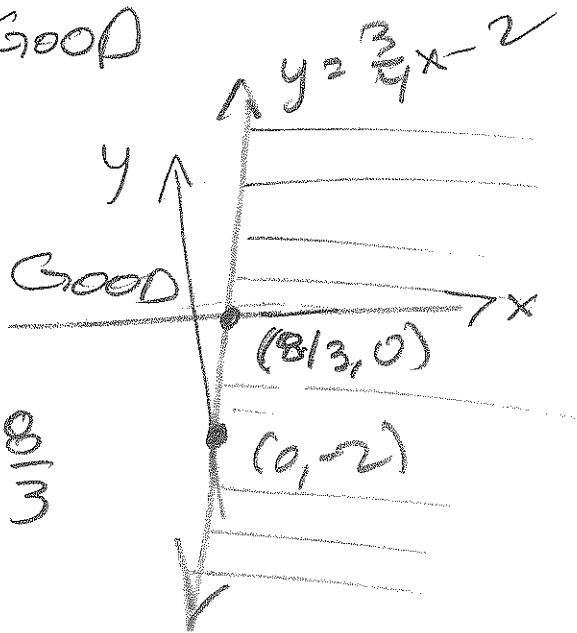
$y = \frac{3}{4}x - 2 = 0$

$\frac{3}{4}x = 2$

$x = 2 \left(\frac{4}{3} \right) = \frac{8}{3}$

$0 \geq -2? \text{ yes}$

(0,0) good



099 §3.4 #531-39

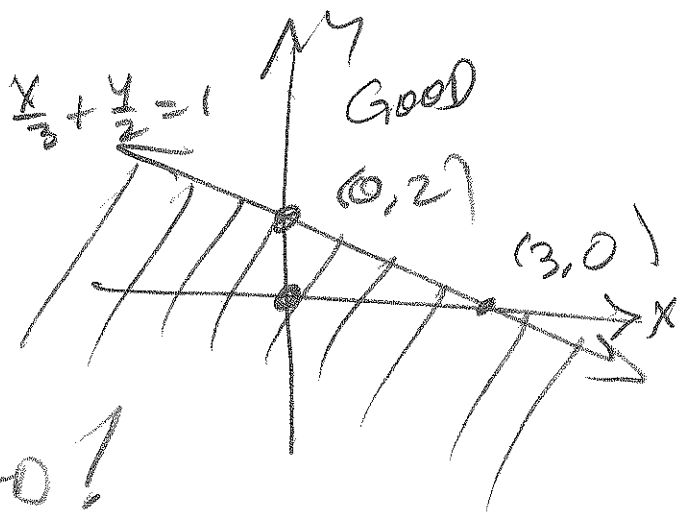
(31) $\frac{x}{3} + \frac{y}{2} > 1$

x	y
0	2
3	0

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

$\frac{x}{3} = 1$
x = 3

0 > 1?
No! (0,0) BAD!



(33) $\frac{x}{3} - \frac{y}{2} > 1$

LCD = 3 * 2

Clear fractions on both sides

$6(\frac{x}{3} - \frac{y}{2} > 1)$

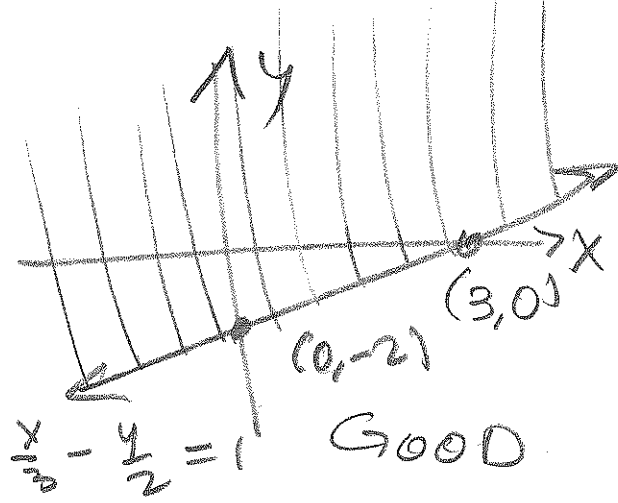
$\frac{6}{1} \cdot \frac{x}{3} - \frac{6}{1} \cdot \frac{y}{2} > 1 \cdot 6$

$2x - 3y > 6$

x	y
0	-2
3	0

0 > 6?

No.
(0,0) Bad



099 J3W #535-39

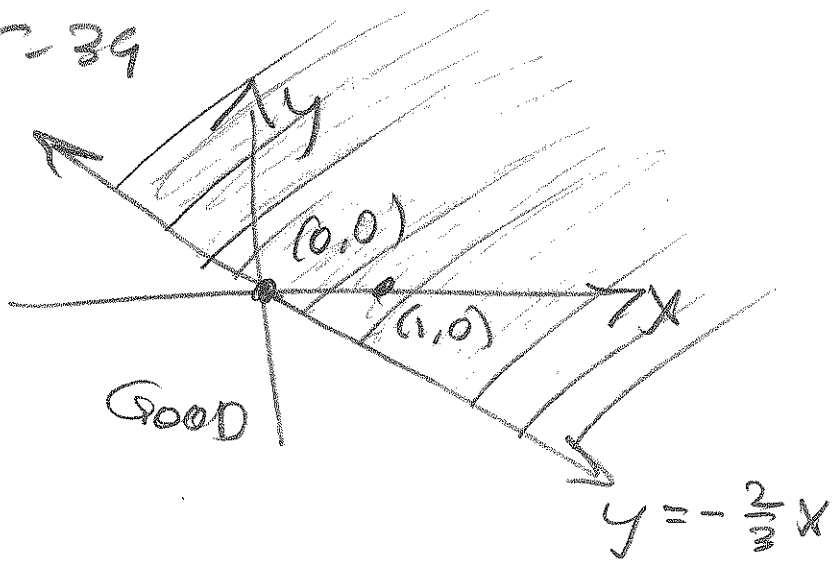
(35) $y \leq -\frac{2}{3}x$

x	y
0	0

$0 \leq -\frac{2}{3}(1)$?

$0 \leq -\frac{2}{3}$? No

(1,0) Bad



(37) $5x - 3y < 0$ Takes some work to see it,

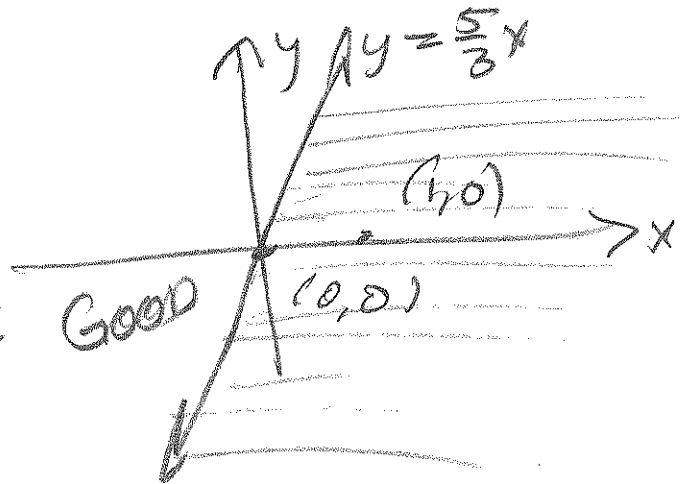
$-3y < -5x$

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

$5(1) - 3(0) < 0$?

$5 < 0$? No

(1,0) Bad



(39) $\frac{x}{4} + \frac{y}{5} \leq 1 \iff 5x + 4y \leq 20$

x	y
0	5
4	0

$0 \leq 1$?

Yes

