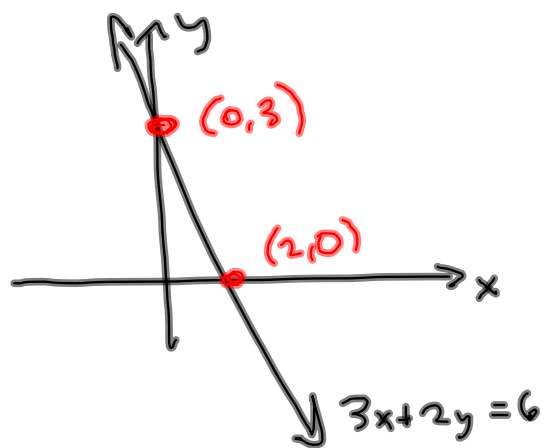


S 3.7 #s 2, 5, 10, 11, 15, 44 - 46

$$3x + 2y = 6$$

x	y
0	3
2	0

$\rightsquigarrow (0, 3)$   
 $\rightsquigarrow (2, 0)$



$$3x + 2y \leq 6$$

Pick a point  
NOT on boundary  
line & test it.

Test  $(0,0)$ :

Is  $(0,0)$  good?

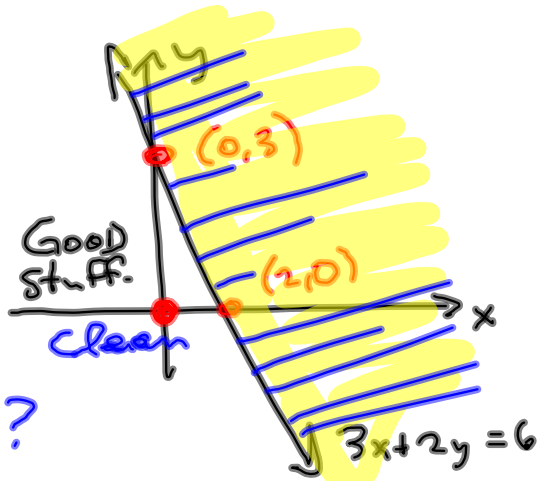
Is  $3(0) + 2(0) \leq 6$ ?

Is  $0 \leq 6$ ?

Yes.  $(0,0)$  Good

Tanzan like.

Scratch out the bad stuff



Teacher Scratch

$$(0, 2) \quad (5, 0)$$

$$m = \frac{-2}{5} = -\frac{2}{5}$$

$$y = m(x - x_1) + y_1,$$

$$y = -\frac{2}{5}(x - 0) + 2$$

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

$$5y = -2x + 10$$

$$2x + 5y = 10$$

Graph the System of Inequalities.

$$3x + 2y \leq 6$$

$$2x + 5y \leq 10$$

$$3x + 2y \leq 6$$

x	y	
0	3	(0,3)
2	0	(2,0)

(0,0):  
 $0 \leq 6?$   
 Yes

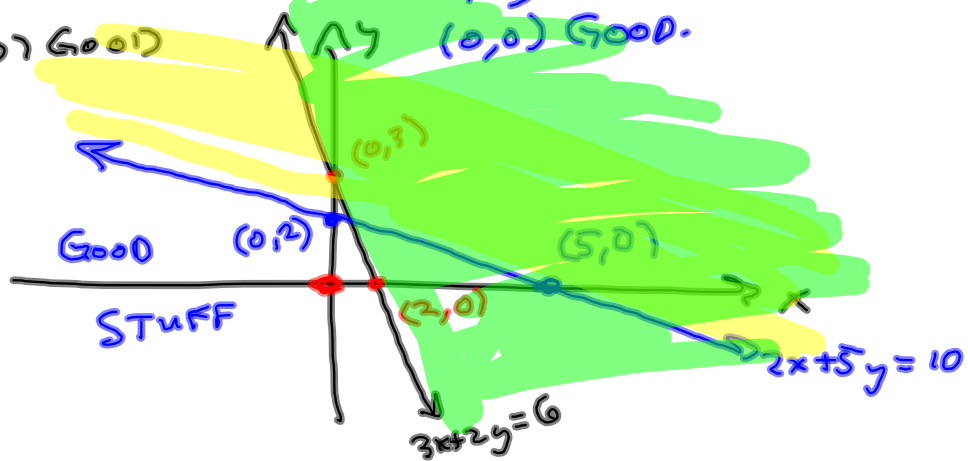
$$2x + 5y \leq 10$$

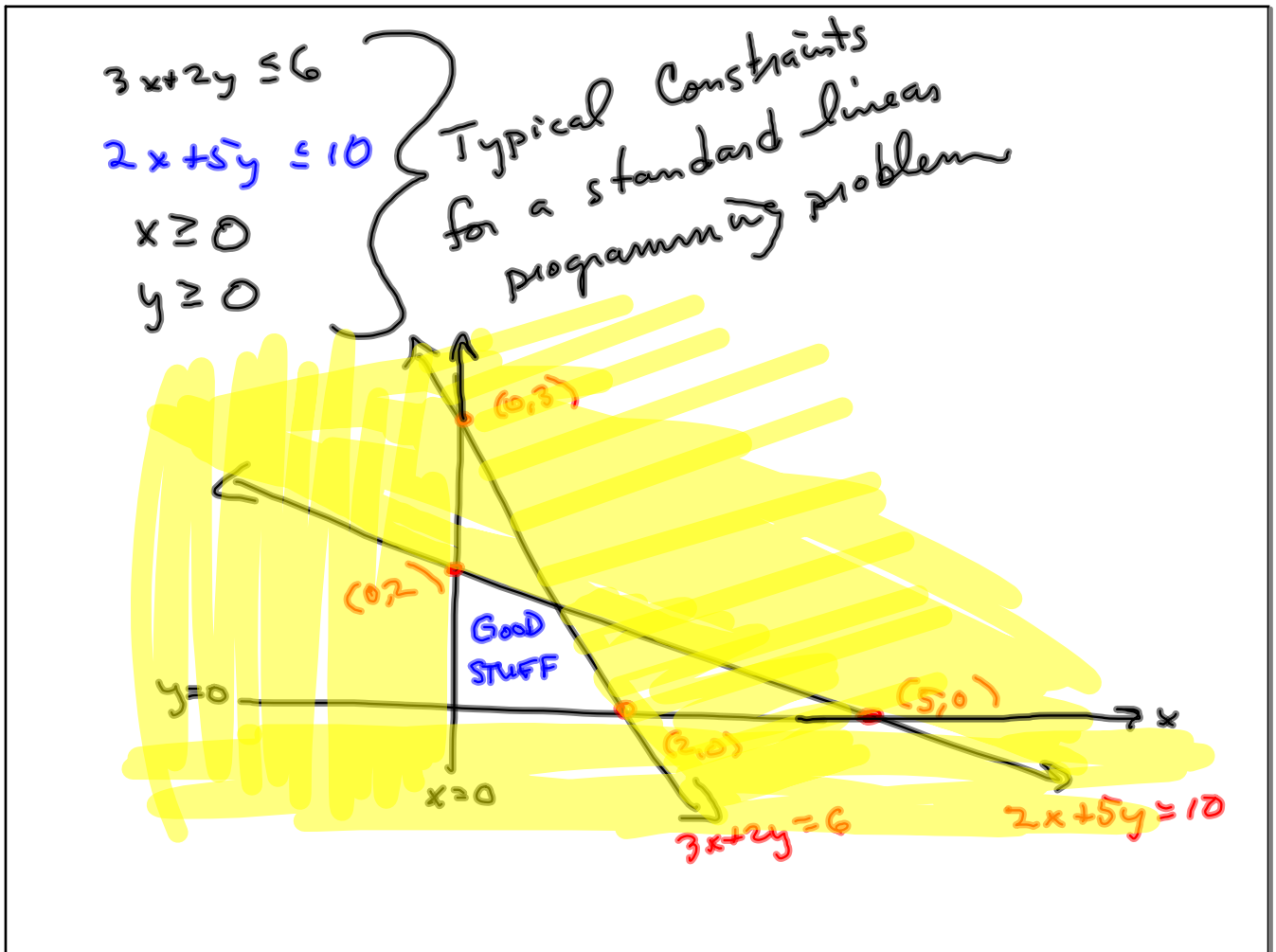
x	y	
0	2	
5	0	

(0,0):  
 $0 \leq 10?$   
 Yes

(0,0) Good

(0,0) Good.

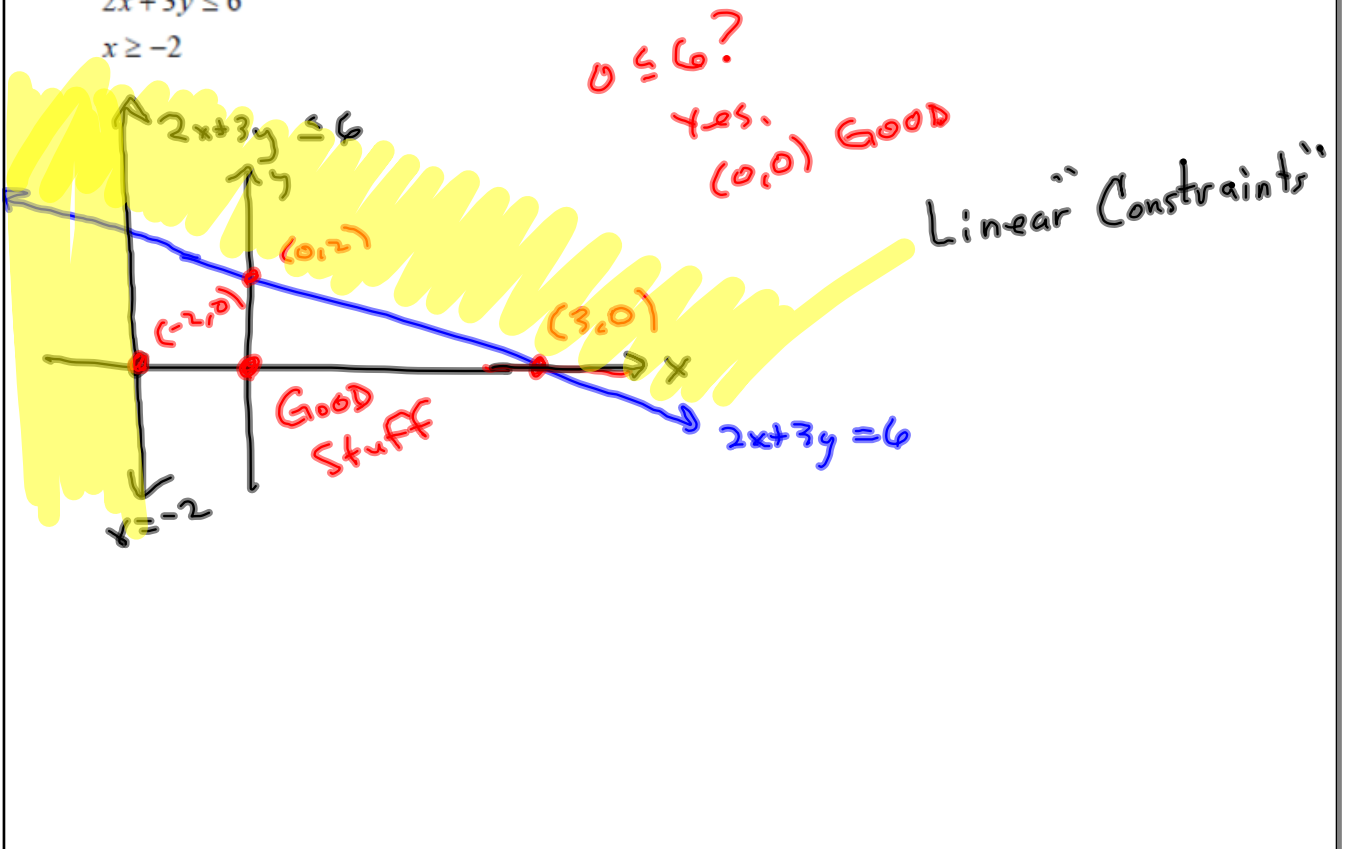




3. (5 pts) Graph the *intersection* of the following inequalities on the same set of coordinate axes. In other words, assume this is an AND situation, as in class. Hint: Use your work from #2.

$$2x + 3y \leq 6$$

$$x \geq -2$$



§ 3.6

$$f(x) = \begin{cases} \cancel{2x-3} \\ x+1 \end{cases}$$

$$\begin{cases} \text{if } x < 1 \\ \text{if } x \geq 2 \end{cases}$$

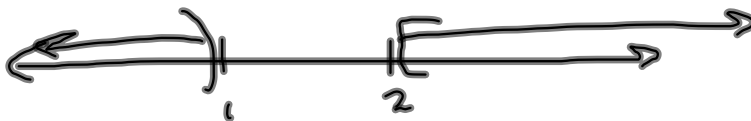
$$2(1) - 3 = -1 \quad \circ$$

$(1, -1)$

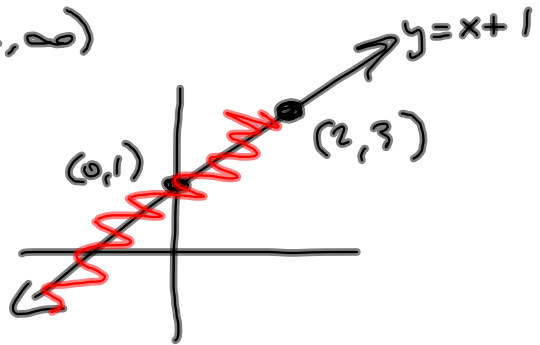
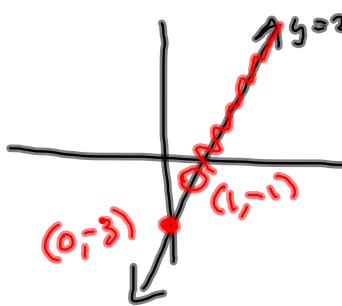
$$y = 2 + 1 = 3$$

$(2, 3) \bullet$

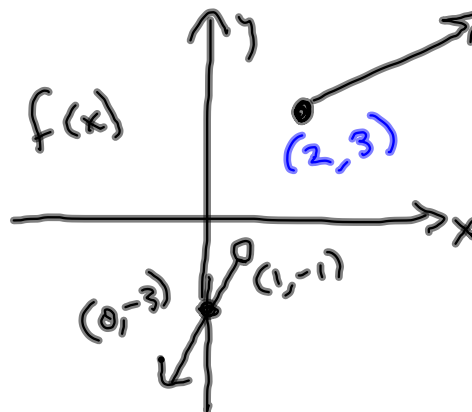
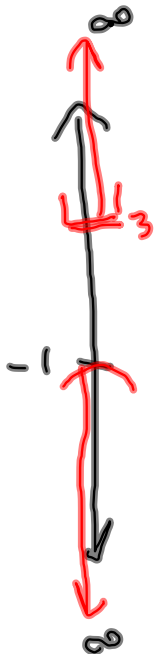
$$D(f) = \{x \mid x < 1 \text{ OR } x \geq 2\}$$



$$D = (-\infty, 1) \cup [2, \infty)$$



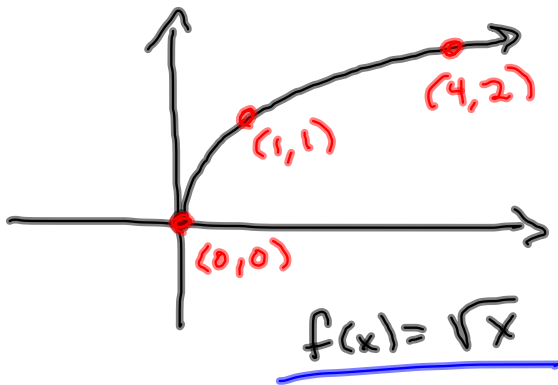
Combine!



$R = ?$

$$R = (-\infty, -1) \cup [3, \infty)$$

Sara

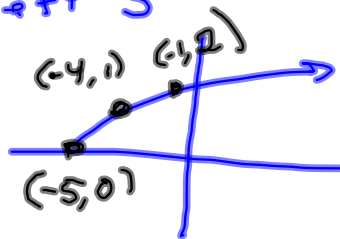


$f(x+h)$   
left  $h$   
 $f(x-h)$   
right  $h$

$f(x)+h$   
up  $h$

$f(x)-h$   
down  $h$

$g(x) = \sqrt{x+5}$   
 $= f(x+5)$   
left 5



$\sqrt{x+5} - 11$   
↑ left 5      ↓ down 11

$f(x) = \sqrt{x}$        $\xrightarrow{\text{left } 5}$        $\sqrt{x+5}$        $f(x+5)$        $\xrightarrow{\text{Down } 11}$        $\sqrt{x+5} - 11$        $f(x+5) - 11$



$\mathcal{D} = [-5, \infty)$

$\mathcal{R} = [-11, \infty)$