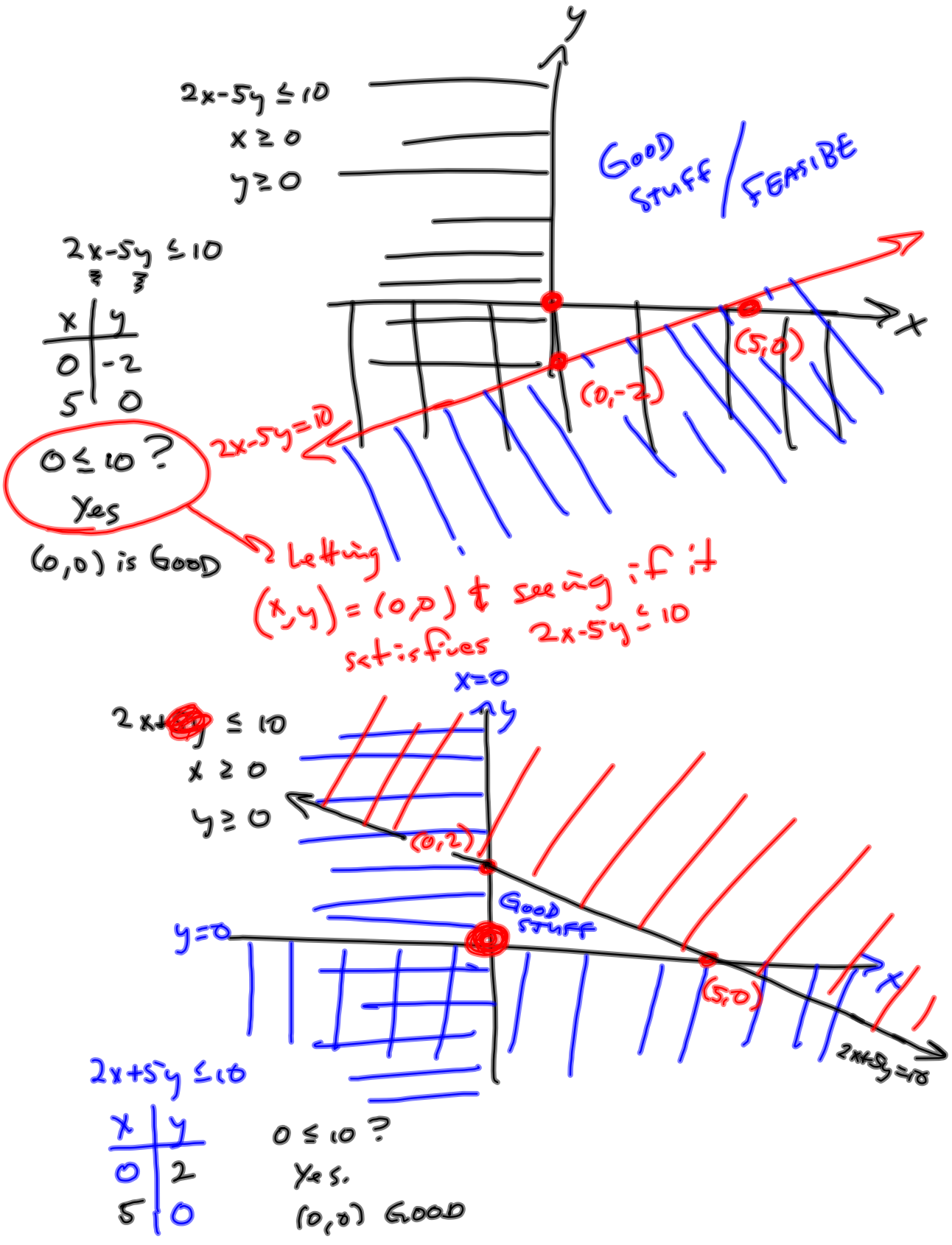
2x-5y ≤ 10
x ≥ 0
y ≥ 0
GOOD STUFF / FEASIBLE
2x-5y ≤ 10
x | y
0 | -2
5 | 0
0 ≤ 10 ?
Yes
(0,0) is GOOD
2x-5y=10
(5,0)
(0,-2)
x
y
letting (x,y) = (0,0) & seeing if it satisfies 2x-5y ≤ 10
2x+5y ≤ 10
x ≥ 0
y ≥ 0
x=0
y=0
(0,2)
GOOD STUFF
(5,0)
2x+5y=10
2x+5y ≤ 10
x | y
0 | 2
5 | 0
0 ≤ 10 ?
Yes.
(0,0) GOOD

Today C7, 8 Worksheet Posted. Problems for practice listed in Friday's Lecture.

I'm asking for a minimal cross-section.

If you can't work a problem on the worksheet, work a bunch that are like it. Look for examples in the book. Just getting the worksheet right doesn't mean you can work them without help on a test. You need to know the difference between understanding and not understanding.

Today & Tomorrow

① $\sqrt{x^2} = |x|$

your book lets you FORGET this with instructions like "Assume all variables represent positive numbers."

When this is the case,

$\sqrt{x^2} = |x| = x$

$3\overline{)39}$
13

② $\sqrt{-1} = i$, $i^2 = -1$

$\sqrt{-39} = i\sqrt{39}$

③ Solving Quadratics by square root property.

④ Completing the square.

$\sqrt{-16} = i\sqrt{16}$

$= i\sqrt{2\cdot2\cdot2\cdot2}$

$= i\,2\cdot2\sqrt{1\cdot1}$

$= i\cdot4 = 4i$

$2\,|\,16$
$2\,|\,8$
$2\,|\,4$
2

FACT: If $a \geq 0, b \geq 0$, then $\sqrt{a}\sqrt{b} = \sqrt{ab}$

$2\,|\,12$
$2\,|\,6$
3

$\sqrt{6}\sqrt{2} = \sqrt{12} = \sqrt{2\cdot2\cdot3} = 2\sqrt{3}$

$\sqrt{-6}\sqrt{-2} = i\sqrt{6}\,i\sqrt{2} = i^2\sqrt{6}\sqrt{2}$

$= i^2\sqrt{12} = i^2\cdot2\sqrt{3}$

$= 2i^2\sqrt{3}$

$= -2\sqrt{3}$

why not just $\sqrt{-6}\sqrt{-2} = \sqrt{(-6)(-2)} = \sqrt{12} = 2\sqrt{3}$

↳ -6 & -2 are NOT ≥ 0.

Rule says $a \geq 0, b \geq 0$ make

$\sqrt{a}\sqrt{b} = \sqrt{ab}$

↑ Product of the radicals

↖ Radical of the product.

No "x" term in the middle

$x^2 - 57 = 0$

$x^2 = 57$

$\sqrt{x^2} = \sqrt{57}$

$|x| = \sqrt{57}$

$x = \sqrt{57}$ or $x = -\sqrt{57}$

$x = \pm\sqrt{57}$

Show these steps on your 1st 20 ties.

$(2x-7)^2 - 15 = 0$

$(\text{something})^2 - \text{constant} = 0$

$(2x-7)^2 = 15$

$\sqrt{(2x-7)^2} = \sqrt{15}$

$|2x-7| = \sqrt{15}$

$2x-7 = \sqrt{15}$ OR $2x-7 = -\sqrt{15}$

$2x = 7+\sqrt{15}$ OR $2x = 7-\sqrt{15}$

$x = \frac{7+\sqrt{15}}{2}$ OR $x = \frac{7-\sqrt{15}}{2}$

After 20:

$(2x-7)^2 = 15$

$2x-7 = \pm\sqrt{15}$

$2x = 7 \pm \sqrt{15}$

$x = \frac{7 \pm \sqrt{15}}{2}$

$$(2x-7)^2+15=0$$

$$(2x-7)^2=-15$$

$$\sqrt{(2x-7)^2}=\sqrt{-15}$$

$$|2x-7|=i\sqrt{15}$$

$$2x-7=i\sqrt{15} \quad \text{OR} \quad 2x-7=-i\sqrt{15}$$

$$2x=7+i\sqrt{15} \quad \text{OR} \quad 2x=7-i\sqrt{15}$$

$$x=\frac{7+i\sqrt{15}}{2} \quad \text{OR} \quad x=\frac{7-i\sqrt{15}}{2}$$

Simplify $\frac{6+\sqrt{54}}{3} =$

$\sqrt{x^2}$

2 | 54
3 | 27
3 | 9
3

$\sqrt{54} = \sqrt{2 \cdot 3 \cdot 3 \cdot 3}$

$= 3\sqrt{6}$

$\frac{3\sqrt{6}}{3} = \sqrt{6}$

~~2~~, ~~3~~, 5, 7, 11, 13, 17

$\frac{6+3\sqrt{6}}{3} = \frac{\cancel{3}(2+\sqrt{6})}{\cancel{3}}$

$= 2+\sqrt{6}$

Coming Soon

$$x = \frac{-b \pm \sqrt{b^2-4ac}}{2a}$$

$$(x+b)^2 = x^2+2bx+b^2$$