

$$|-3x+2| \geq 5$$

$$-3x+2 \geq 5 \quad \text{OR} \quad -3x+2 \leq -5$$

$$\frac{-3x \geq 3}{-3} \quad \frac{3}{-3}$$

$$x \leq -1$$

BAD!

$$-3x \leq -7$$

CS - combining steps in an unhealthy way.

DW - Double Whammy!

$$-3x+2 \geq 5$$

$$-3x \geq 3$$

$$\frac{-3x \leq 3}{-3} \quad \frac{3}{-3}$$

$$x \leq -1$$

GOOD

optional step.

$$|3x - 27.998| > -1$$

$$(-\infty, \infty)$$

$$|3x - 3.12198 \pi e^7| < -1$$

Never

$$|2.1x + 97| = -35$$

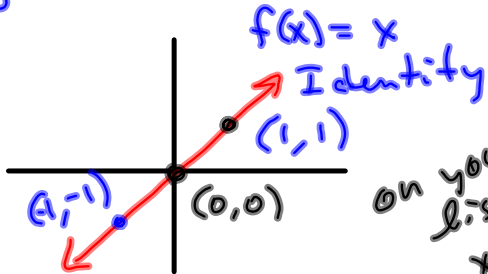
Never

Finish-up C3

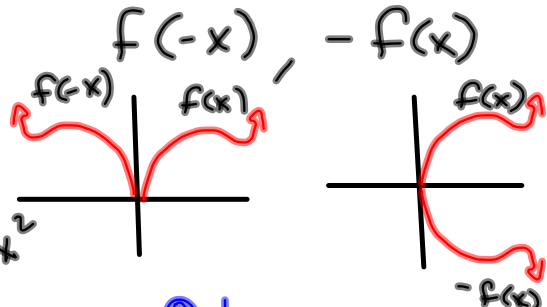
134K $\kappa?$

3.6 Reflections

$y=x$

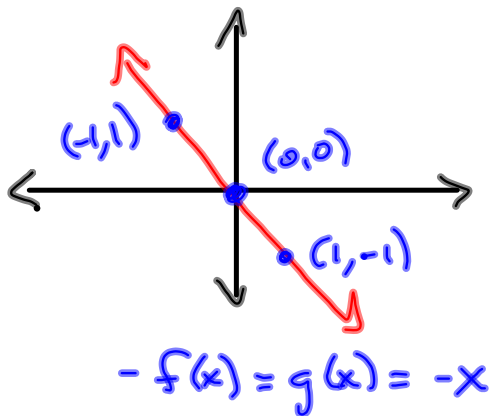
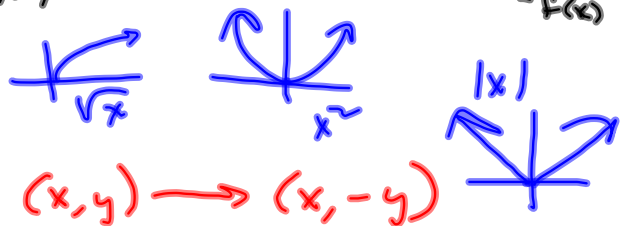


on your list:
 $x, \sqrt{x}, |x|, x^2$

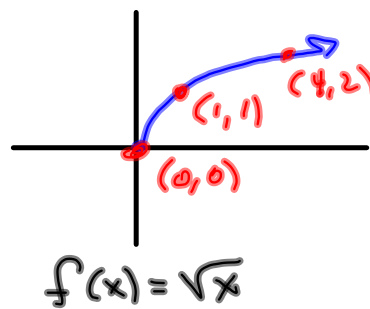


To graph $g(x) = -x$

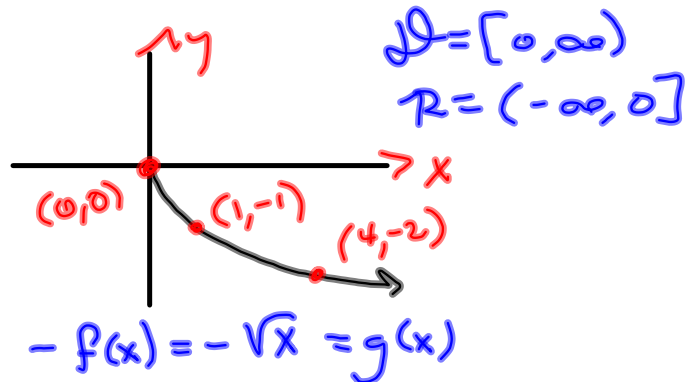
$-f(x) = -x$



$g(x) = -\sqrt{x}$



$\mathcal{D} = [0, \infty)$
 $\mathcal{R} = [0, \infty)$



$$g(x) = -\sqrt{2-x} - 11$$

$$f(x-2)$$

How to de-construct it:

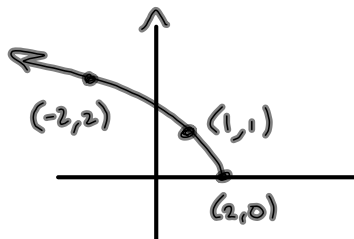
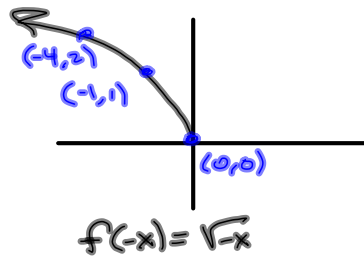
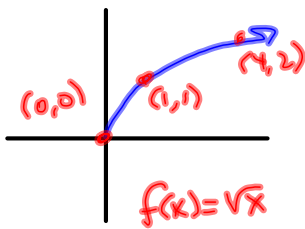
$2-x = -(x-2)$ How to maneuver to $2-x$?
 $x \rightarrow -x \rightarrow -(x-2)$

$f(x) = \sqrt{x}$

$f(-x) = \sqrt{-x}$ flip \leftrightarrow

$f(-(x-2)) = \sqrt{-(x-2)}$
 Delay \uparrow Right Shift 2

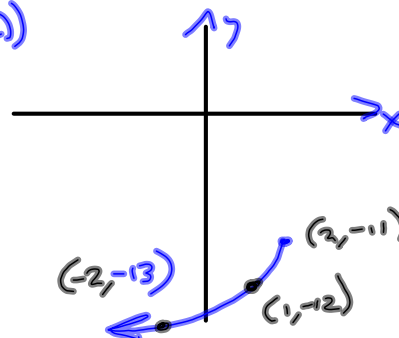
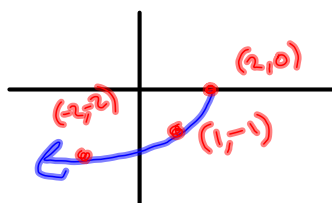
Break it down in terms of moves we know how to make



$$f(-(x-2)) = \sqrt{-(x-2)} = \sqrt{2-x}$$

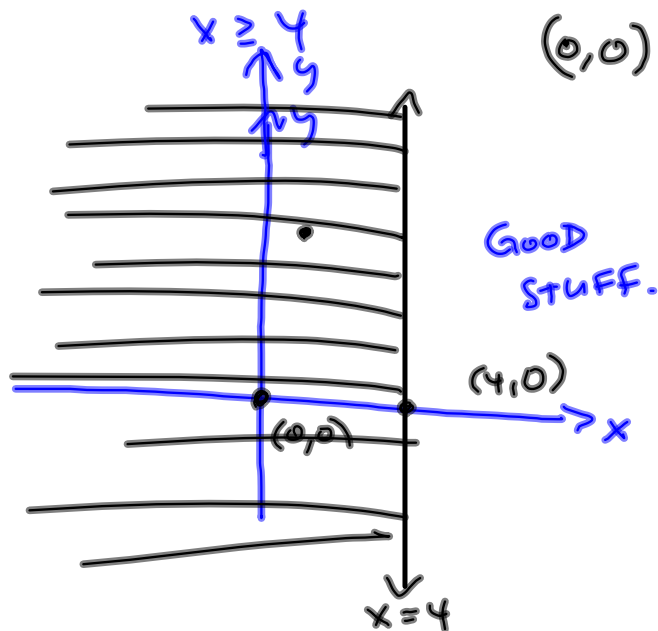
we want to get to $-\sqrt{2-x} - 11$
 $= -\sqrt{-(x-2)} - 11$

$$-\sqrt{-(x-2)} = -f(-(x-2))$$



$$-f(-(x-2)) - 11 = g(x) = -\sqrt{-(x-2)} - 11$$

§3.7 Scratch out the bad stuff
 Good stuff stays clean.



$(0,0)$

$0 \geq 4?$

No.

$(0,0)$ BAD !

GOOD
STUFF.

$(4,0)$

$(0,0)$

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

x	y
0	2
5	0

$2x + 5y = 10$ is boundary line

$$2(0) + 5y = 10$$

$$5y = 10$$

$$y = 2$$

$$2x + 5(0) = 10$$

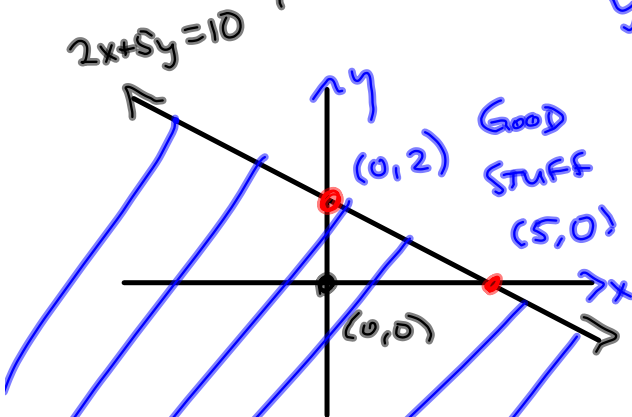
$$2x = 10$$

$$x = \frac{10}{2} = 5$$

is $(0,0)$ Good?

$$2(0) + 5(0) \geq 10?$$

$(0,0)$ BAD!



A system of Linear Inequalities.

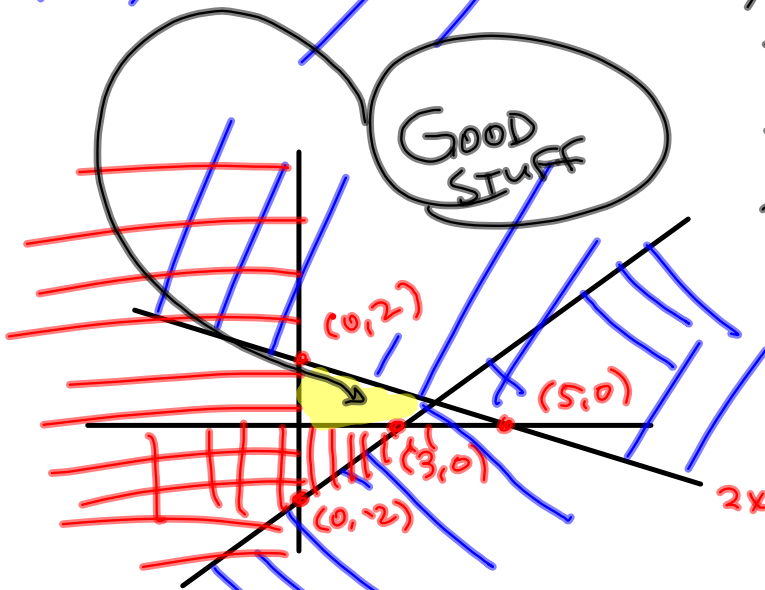
$$2x + 5y \leq 10$$

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

$$x \geq 0$$

$$y \geq 0$$

x	y
0	-2
3	0



$2x + 5y = 10$ $(0,0)$ good

$$2x - 3y = 6$$

$$0 \leq 6?$$

$(0,0)$ good.