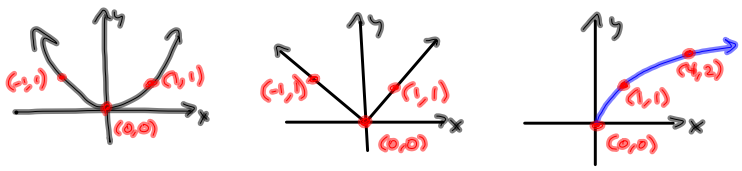
Homework Solutions are Posted.

$f(x)=x^2$ $f(x)=|x|$ $f(x)=\sqrt{x}$



Homework: 48 pts + 4 Bonus possible

$A=P(1+\frac{r}{n})^{nt}$ Learn how to implement this.

TI-30 $\mathbb{X}$ is a nice 1-step calculator.

6. $\varnothing$ 7. $\varnothing$ 8. $(-\infty,\infty)$

$|9x+7|=|3x-1|$

$9x+7=3x-1$ OR $9x+7=-(3x-1)$ The Key

$6x=-8$ OR $9x+7=-3x+1$

$x=-\frac{8}{6}=-\frac{4}{3}$ OR $12x=-6$

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

$x\in\{-\frac{4}{3},-\frac{1}{2}\}$

Some are writing this: $\{x\,|\,x=-\frac{4}{3}$ OR $x=-\frac{1}{2}\}$ which is fine, but when the solution set only has 2 numbers, total, just listing them is easier. $x\in\{-\frac{4}{3},-\frac{1}{2}\}$

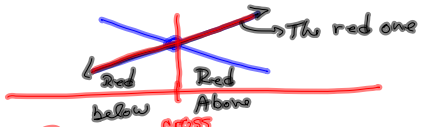
Mega-Bonus is taking THIS and applying it to $|9x+7|>|3x-1|$.

This breaks up $\mathbb{R}$ into 3 pieces.

$(-\infty,-\frac{4}{3})$ $-\frac{4}{3}$ $(-\frac{4}{3},-\frac{1}{2})$ $-\frac{1}{2}$ $(-\frac{1}{2},\infty)$

$x=-\frac{4}{3}$ & $x=-\frac{1}{2}$ is where they cross.

at these crossings, the switch who's on top



Analyse above & Below: $|9x+7|\overset{?}{>}|3x-1|$

	Test			
$(-\infty,-\frac{4}{3})$	$x=-2$	$11>7$	Yes.	Scratch: $\lvert 9(-2)+7\rvert=\lvert -18+7\rvert=\lvert -11\rvert=11$
$(-\frac{4}{3},-\frac{1}{2})$	$x=-1$	$2<4$	NO	$\lvert 3(-2)-1\rvert=(-6-1)=\lvert -7\rvert=7$
$(-\frac{1}{2},\infty)$	$x=0$	$7>1$	Yes	$\lvert 9(-1)+7\rvert=\lvert -2\rvert=2$

$\lvert 3(-1)-1\rvert=\lvert -4\rvert=4$

$\lvert 7\rvert=7$

$\lvert -1\rvert=1$

Answer: $(-\infty,-\frac{4}{3})\cup(-\frac{1}{2},\infty)$

Fixes Iracha's Flatulence week 1.

Quiz on Tuesday, Based on Home 02
It may have something from Home 01.

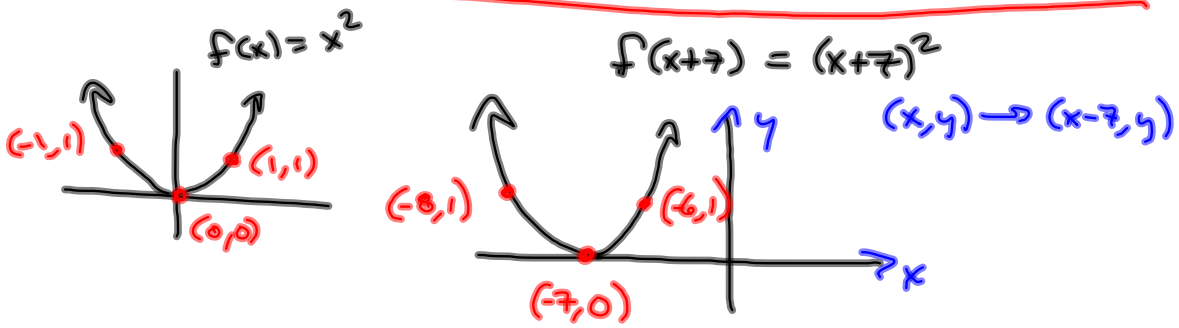
The x^2, $|x|$, & $\sqrt{x}$ talk is from §3.6

Horizontal Shift: $f(x+7)$ Left 7 Advance

Horizontals are "opposite" of your intuition. $(x,y) \longrightarrow (x-7,y)$

$f(x-5)$ Right 5 Delay

$(x,y) \longrightarrow (x+5,y)$



$f(x) + 7$ Vertical shift

up 7

$(x, y) \longrightarrow (x, y+7)$

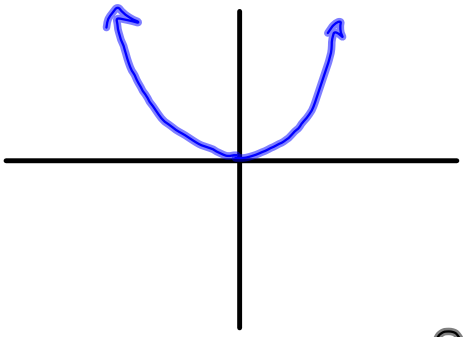
$f(x) - 5$

down 5

$(x, y) \longrightarrow (x, y-5)$

These are intuitive. Just what you'd hope.

$g(x) = (x+3)^2 - 11$



$f(x) = x^2$ and $g(x) = f(x+3) - 11$

Writing $g(x)$ in terms of the basic functions.

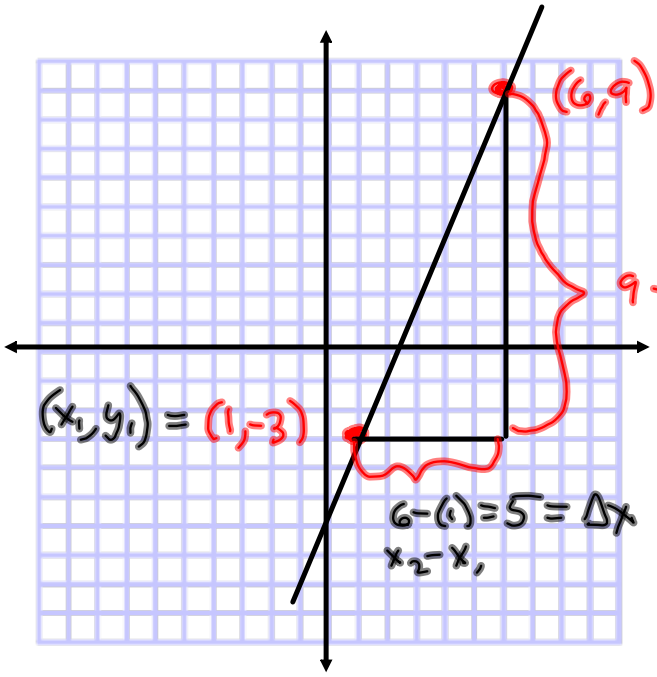
$f(x+3) - 11$

left 3 down 11

Step Back to §3.4

Slope of the Line Between Two Points.

$m = \text{SLOPE} = \frac{\text{RISE}}{\text{RUN}} = \frac{\text{CHANGE IN } Y}{\text{CHANGE IN } X} = \frac{\Delta y}{\Delta x}$



$= \frac{12}{5} = m$

Equation of the Line – Jumped the Gun

$m = \frac{y_2 - y_1}{x_2 - x_1}$