

I'm Gone Friday the 4th
 Quiz on Friday the 4th

FINAL TEST
 Tuesday, May 8th
 9:10am - 11:00am

Please Do teacher evals online
 check your e-mail

Finishing this semester:
 Graphing \sqrt{x} , $\frac{1}{x}$, $\frac{1}{x^2}$, x^2 , $|x|$, x^3
 and their variants:

$f(x-h) + k$
 Vertical Reflection when "-"
 right "h" units
 up k units

homework #9 is posted.
 It's due Tuesday, May 1st
 Hand Back Wednesday
 Quiz Friday.

Bonus Graphs:
 Horizontal Reflections

$\sqrt{-x+5}$

$f(-x+h) = f(-(x-h))$

$\sqrt{-x}$

$\sqrt{-x-h}$

RIGHT "h" units

$\sqrt{-x-5} = \sqrt{-x+5}$

Complete the square and graph

$$g(x) = x^2 - 6x + 5$$

B4:

$$x^2 - 6x + 5 = 0$$

$$x^2 - 6x = -5$$

$$x^2 - 6x + 3^2 = -5 + 9$$

$$(x-3)^2 = 4$$

in order to solve
the equation.

Compare
&
Contrast

Now we're not solving
an equation; rather, we're
manipulating an
expression.

$$g(x) = x^2 - 6x + 5$$

$$= x^2 - 6x + 5$$

$$= x^2 - 6x + 3^2 - 9 + 5$$

$$= (x-3)^2 - 4 = g(x)$$

right 3 down 4

If $f(x) = x^2$, then

$$g(x) = f(x-3) - 4$$

$$f(x) = \frac{1}{x^2} \quad \text{Then}$$

$$f(\odot) = \frac{1}{\odot^2}$$

$$f(\boxed{x-3}) = \frac{1}{\boxed{x-3}^2}$$

$$\boxed{f(x-3) - 4}$$

$$= \frac{1}{(x-3)^2} - 4$$

right 3 down 4

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

then $f(x-3) - 4$ is

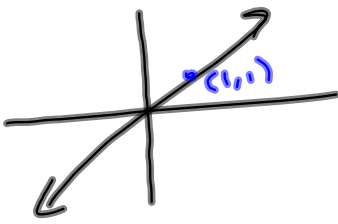
$$\sqrt{x-3} - 4$$

right 3 down 4

$$f(x) = |x|$$

$$f(x-3) + 7$$

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

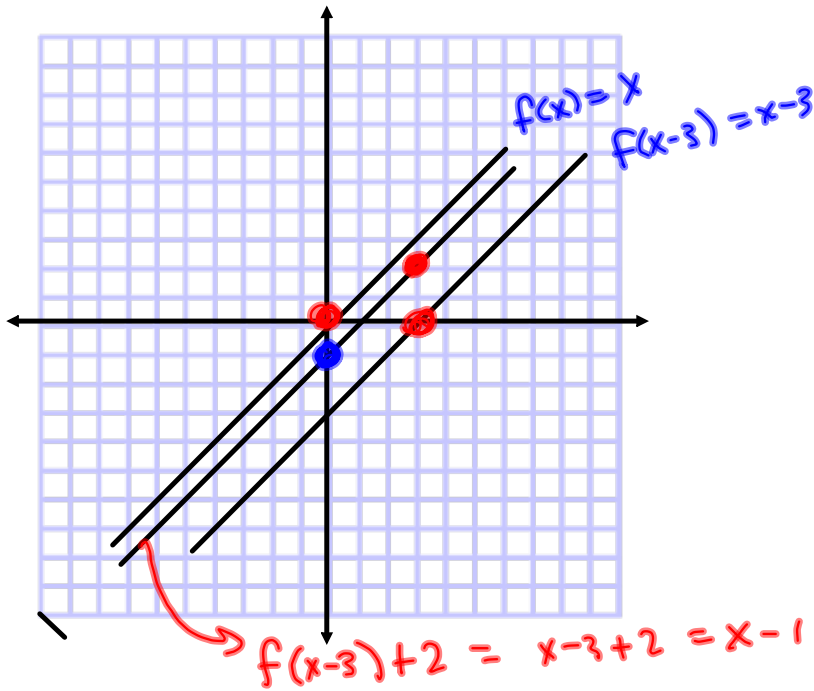
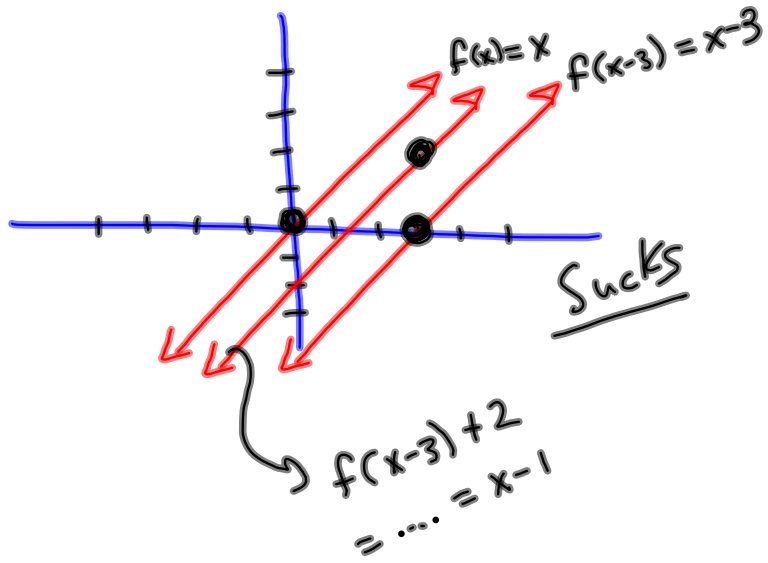


$$f(x) = x$$

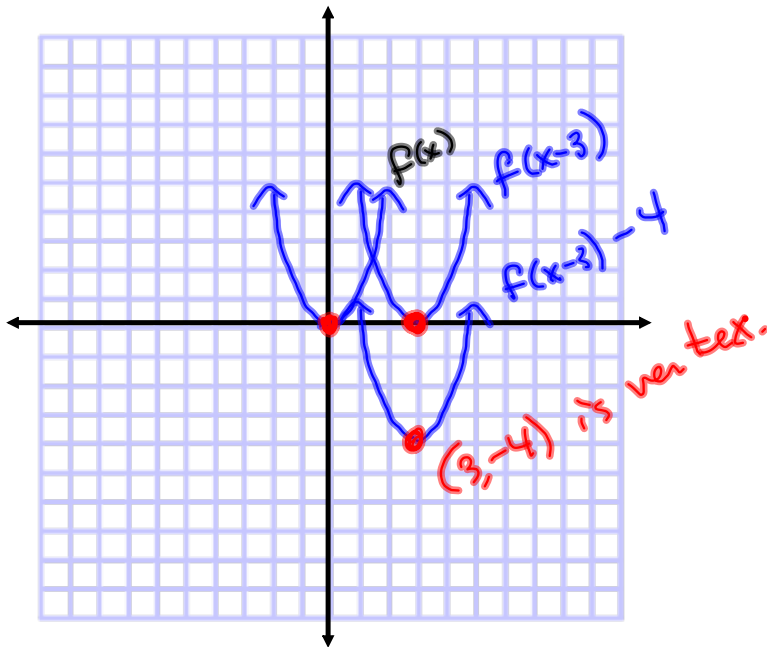
$$f(x-3) + 2$$

$$= x-3 + 2$$

$$= x-1$$



$$(x-3)^2 - 4 = g(x) \quad \underline{f(x) = x^2} \longrightarrow (x-3)^2 \longrightarrow (x-3)^2 - 4$$



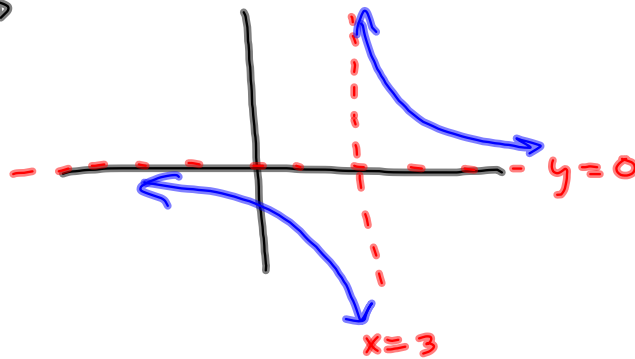
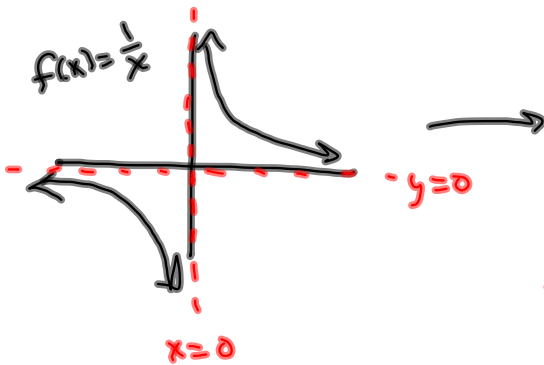
$$g(x) = \frac{1}{x-3} - 4$$

$f(x) = \frac{1}{x}$, so $g(x)$ is $f(x-3) - 4$

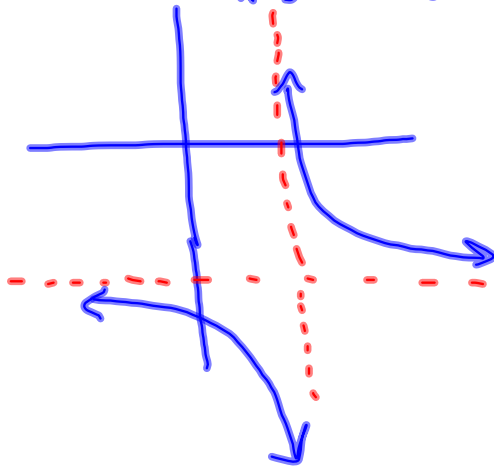
Right 3 Down 4

$$\frac{1}{x} \longrightarrow \frac{1}{x-3} \longrightarrow \frac{1}{x-3} - 4$$

$$f(x-3) = \frac{1}{x-3}$$



$$f(x-3) - 4 = \frac{1}{x-3} - 4 = g(x)$$



This works (looks) exactly (almost) the same for $f(x) = \frac{1}{x^3}, \frac{1}{x^5}$

