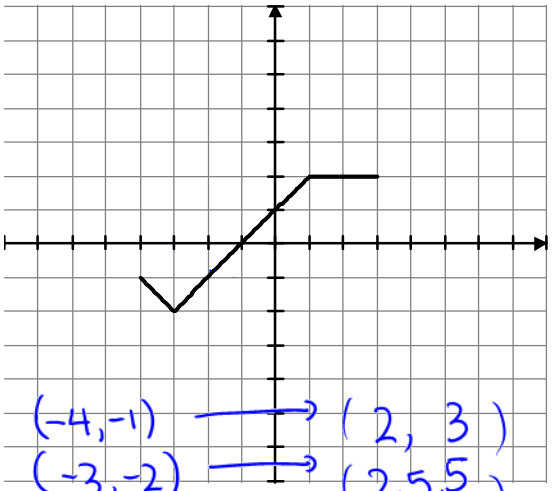
Review warmup 1.5b

Below is the graph of $y = f(x)$



$(-4,-1) \rightarrow (2, 3)$

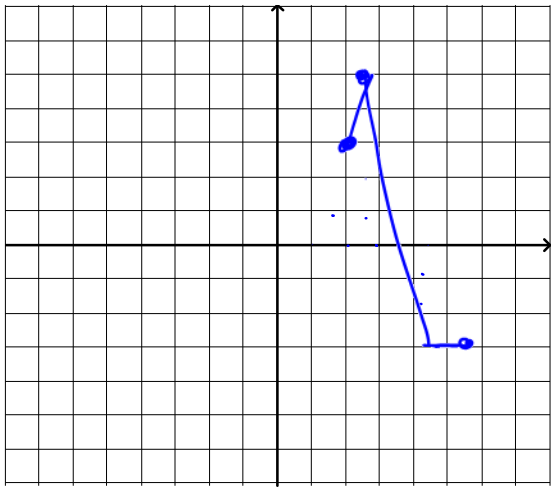
$(-3,-2) \rightarrow (2.5,5)$

$(1,2) \rightarrow (4.5,-3)$

$(3,2) \rightarrow (5.5,-3)$

Construct the graphs of

$$y = -2f\left(2(x-4)\right)+1$$



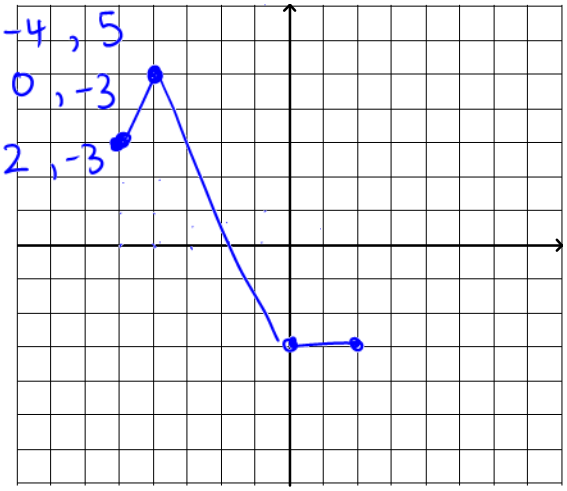
$$\frac{(y-1)}{-2} = f(x+1)$$

$(-4,-1) \rightarrow -5, 3$

$(-3,-2) \rightarrow -4, 5$

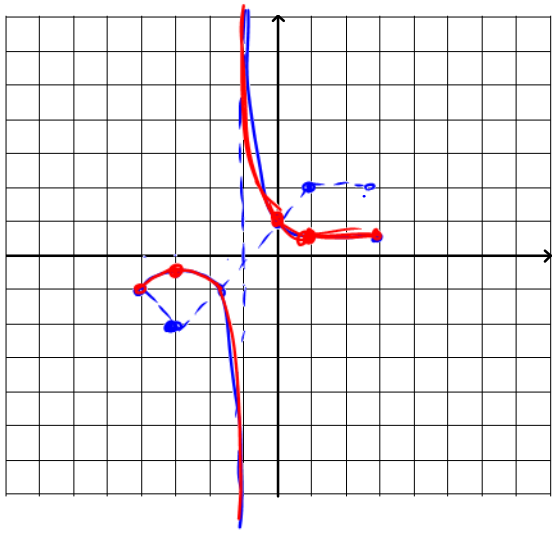
$(1,2) \rightarrow 0, -3$

$(3,2) \rightarrow 2, -3$



$$y = \frac{1}{f(x)}$$

(Review from last year)



2. Consider the function $y = 2x^2 + 4x - 3$. Write the equation of the transformed function after:

a) a horizontal translation 2 units right, followed by a vertical translation 6 units up

$x \to x-2$

$y = 2(x-2)^2 + 4(x-2) - 3 + 6$

b) a horizontal expansion of 3, followed by a horizontal translation of 5 right, followed by a reflection in the y axis

$x \to \frac{1}{3}(x-5) \to \frac{1}{3}(-x-5)$

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

$y = 2\left(\frac{1}{3}(-x-5)\right)^2 + 4\left(\frac{1}{3}(-x-5)\right) - 3$

c) a reflection through the line $y = x$

$x = 2y^2 + 4y - 3$

3. The function $y = f(x)$ has domain $-6 \le x \le 5$ and range $-8 \le y \le 4$. Determine the domain and range for the following functions:

11 -1

a) a reflection of the graph through the line $y = x$

domain $-8 \le x \le 4$ range. $-6 \le y \le 5$

b) $y = -f(x+2) + 3$

domain $-8 \le x \le 3$ $-1 \le y \le 11$

c) ~~$y = |f(x)|$~~

$2y = f(.5x - 4)$

$f\left(\frac{1}{2}x - 4\right)$

translation first

$-6 \le x \le 5$

-2

$-4 \le x \le 18$

$-4 \le y \le 2$

$(-6,8)$ $y = |f(x)|$ $(5,4)$ $(-6,-8)$

Domain $-6 \le x \le 5$

$0 \le y \le 8$