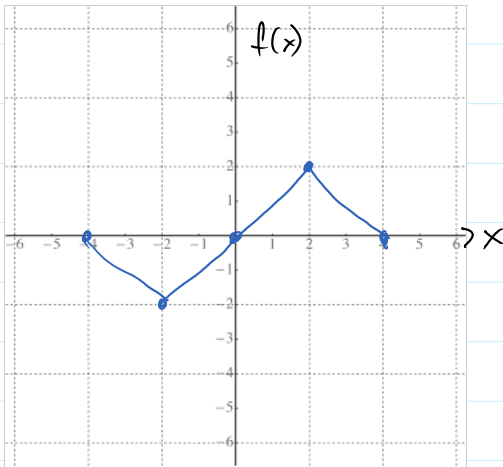


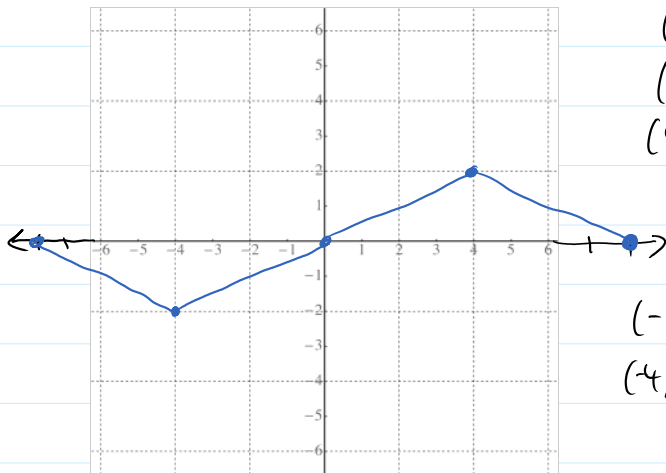
Offline HW 2 due Tuesday 10/24
Online review on Sunday 8:30 PM



$$\text{Dom: } [-4, 4]$$

$$\text{Range: } [-2, 2]$$

Find $f(\frac{1}{2}x)$ - horizontal stretch by factor of 2



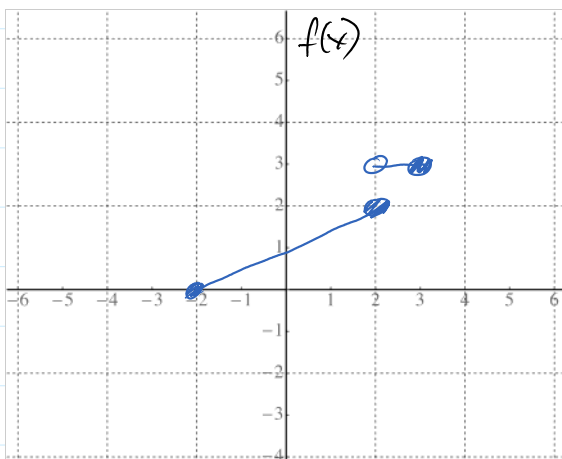
$$(0, 0) \rightarrow (0 \cdot 2, 0) = (0, 0)$$

$$(2, 2) \rightarrow (2 \cdot 2, 2) = (4, 2)$$

$$(4, 0) \rightarrow (4 \cdot 2, 0) = (8, 0)$$

$$(-2, -2) \rightarrow (-2 \cdot 2, -2) = (-4, -2)$$

$$(4, 0) \rightarrow (-4 \cdot 2, 0) = (-8, 0)$$



plot

$$2f(x-1)$$

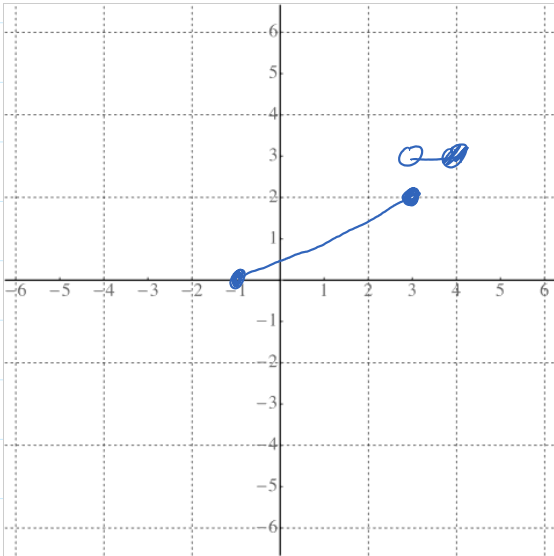
vert.
stretch
by 2

shift right
by 1

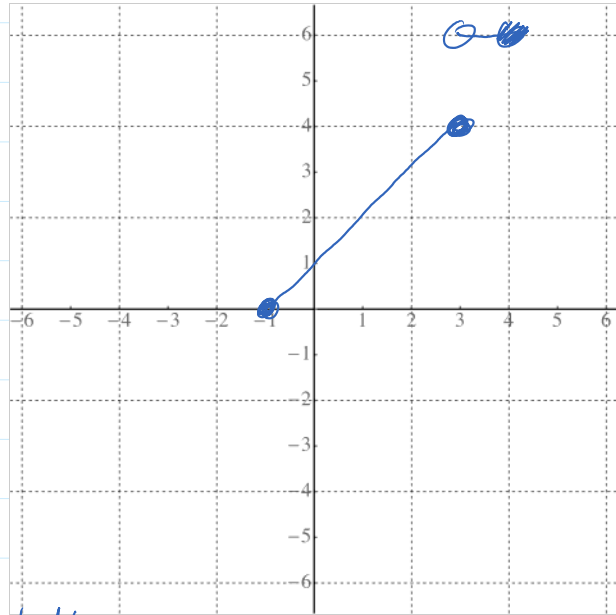


First shift then stretch

$f(x-1)$ shift



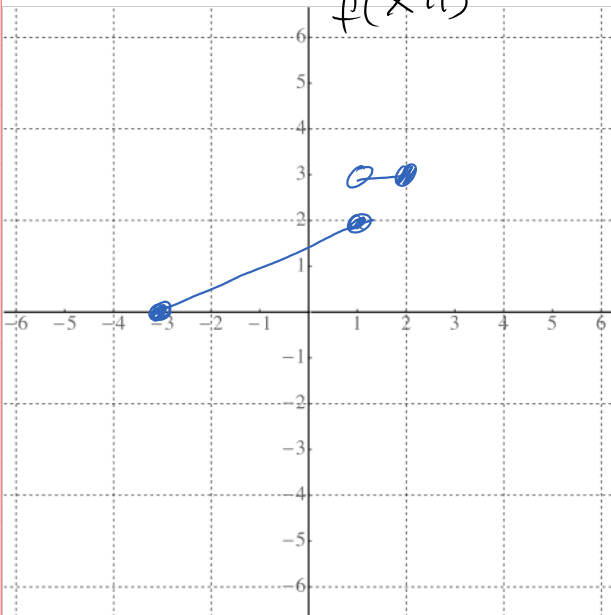
$2f(x-1)$ stretch



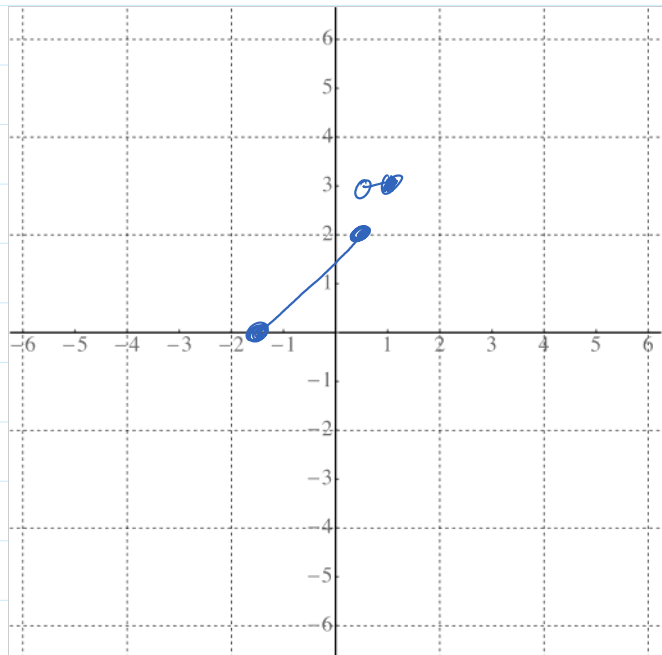
Plot $-f(2x+1)$
 ref. about the x-axis
 hor. shift to left by 1
 hor. shrink by $\frac{1}{2}$

- 1) shift left by 1
- 2) hor. shrink by factor of 2
- 3) reflection

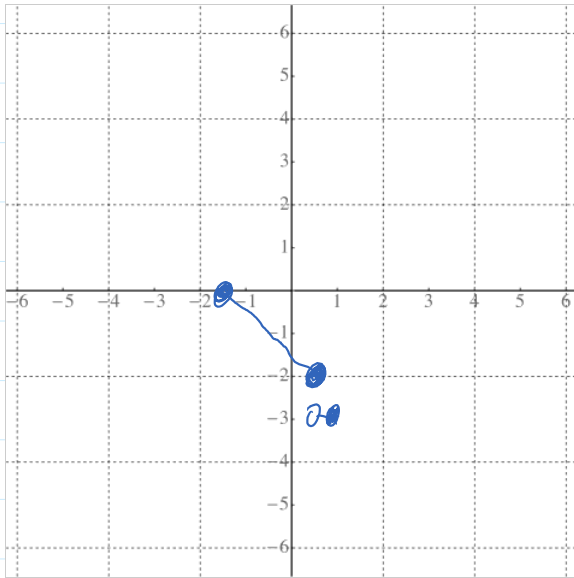
$f(x+1)$



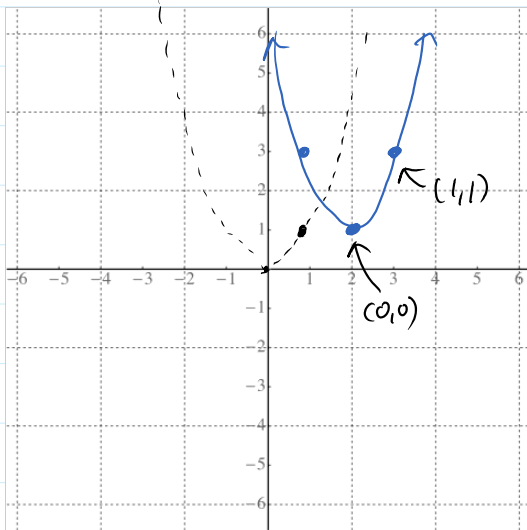
$f(2x+1)$



$$-f(2x+1)$$



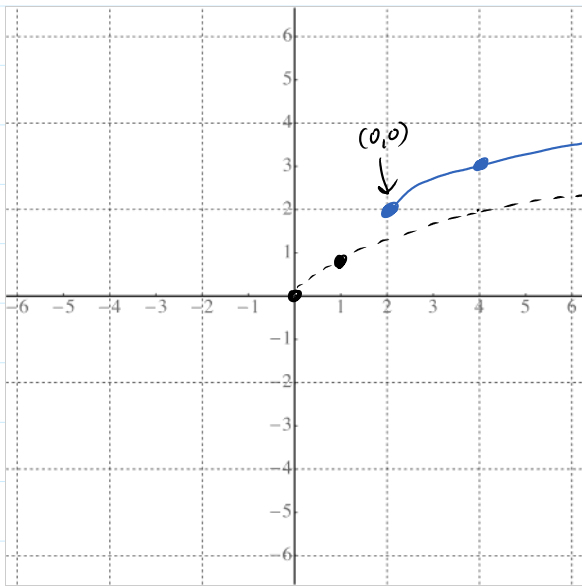
write a possible equation
for the given graph.



~~$(x-2)^2 + 1$~~
Transformations:

- horizontal shift right 2
- vertical shift up 1
- vertical stretch by 2

$$f(x) = 2(x-2)^2 + 1$$



$$(0,0) \rightarrow (2,2)$$

- hor. shift right 2
- ver. shift up 2
- hor. stretch by 2

orig: \sqrt{x}

new: $\sqrt{\frac{1}{2}x-2} + 2$