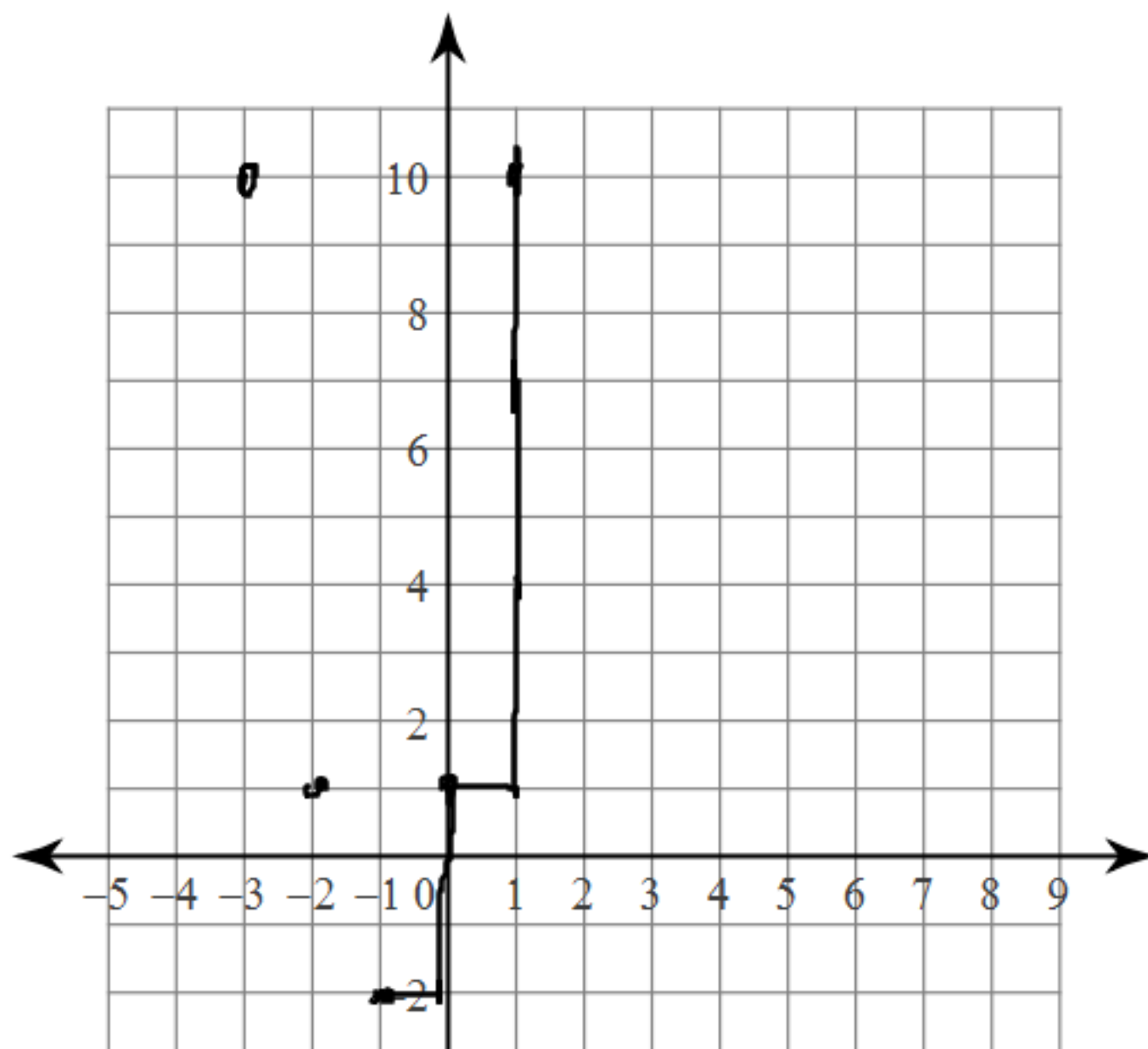


Sketch the graph of each function. State the horizontal and vertical shifts, max/min, stretch/shrink, axis of symmetry, direction of opening, and the vertex

Kirsten

12)  $y = 3(x + 1)^2 - 2$



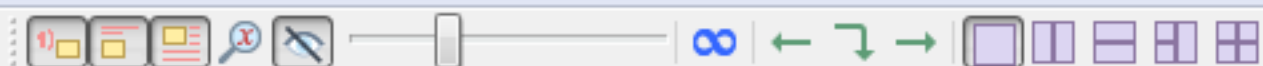
shrinks by 3  
vertex  $\rightarrow (-1, -2)$

a.o.s.  $\rightarrow x = -1$

v.s.  $\rightarrow$  down 2

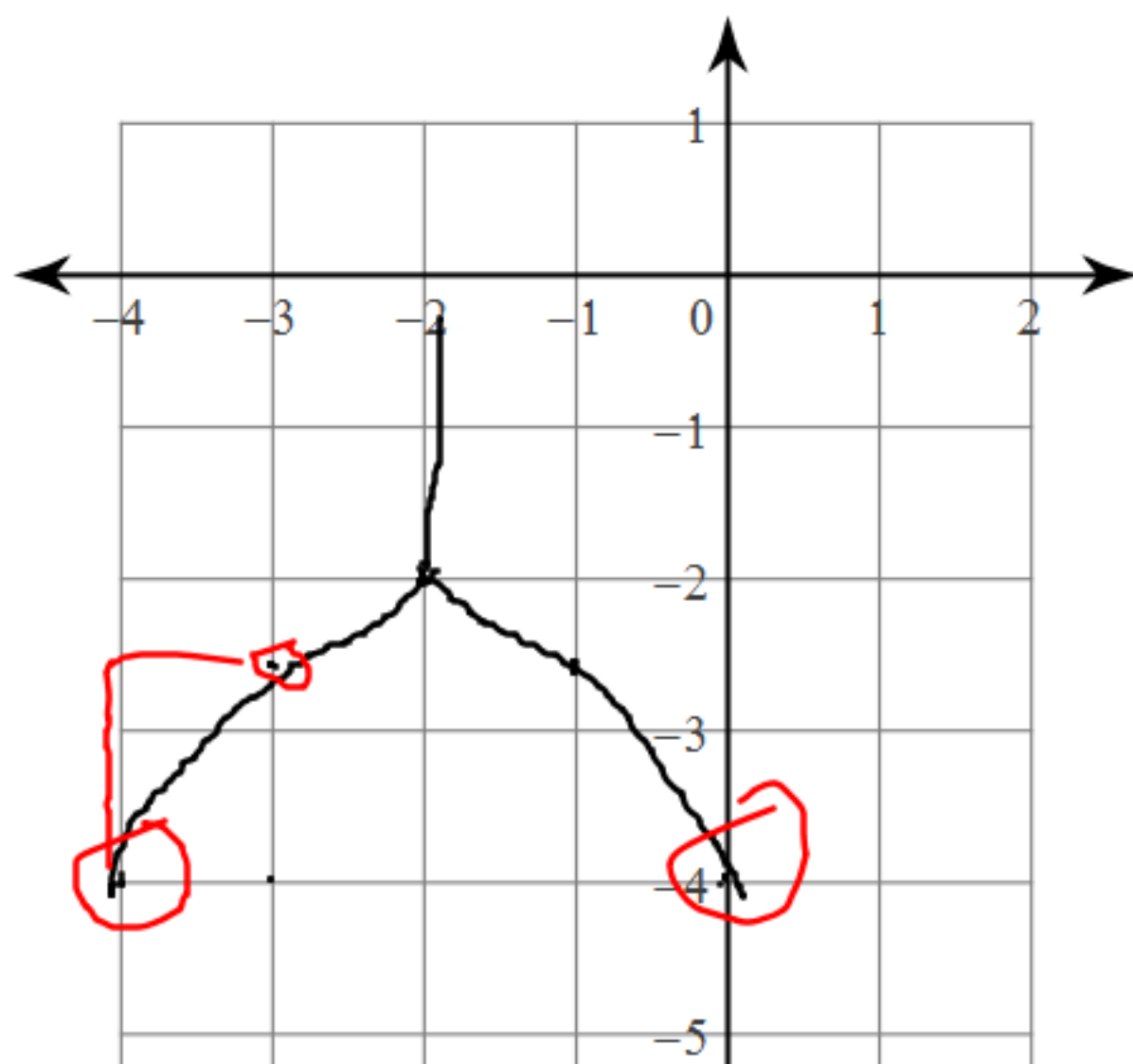
h.s.  $\rightarrow$  left + 1

opens up  
min



Sketch the graph of each function. State the horizontal and vertical shifts, max/min, stretch/shrink, axis of symmetry, direction of opening, and the vertex

$$9) y = -\frac{1}{2}(x+2)^2 - 2$$



$$1 \times 0.5 = 0.5$$

$$3 \times 0.5 = 1.5$$

Stretch 0.5

$$V = (-2, -2)$$

HS = left 2

VS = down 2

$$x = -2$$

Max

~~up~~ down