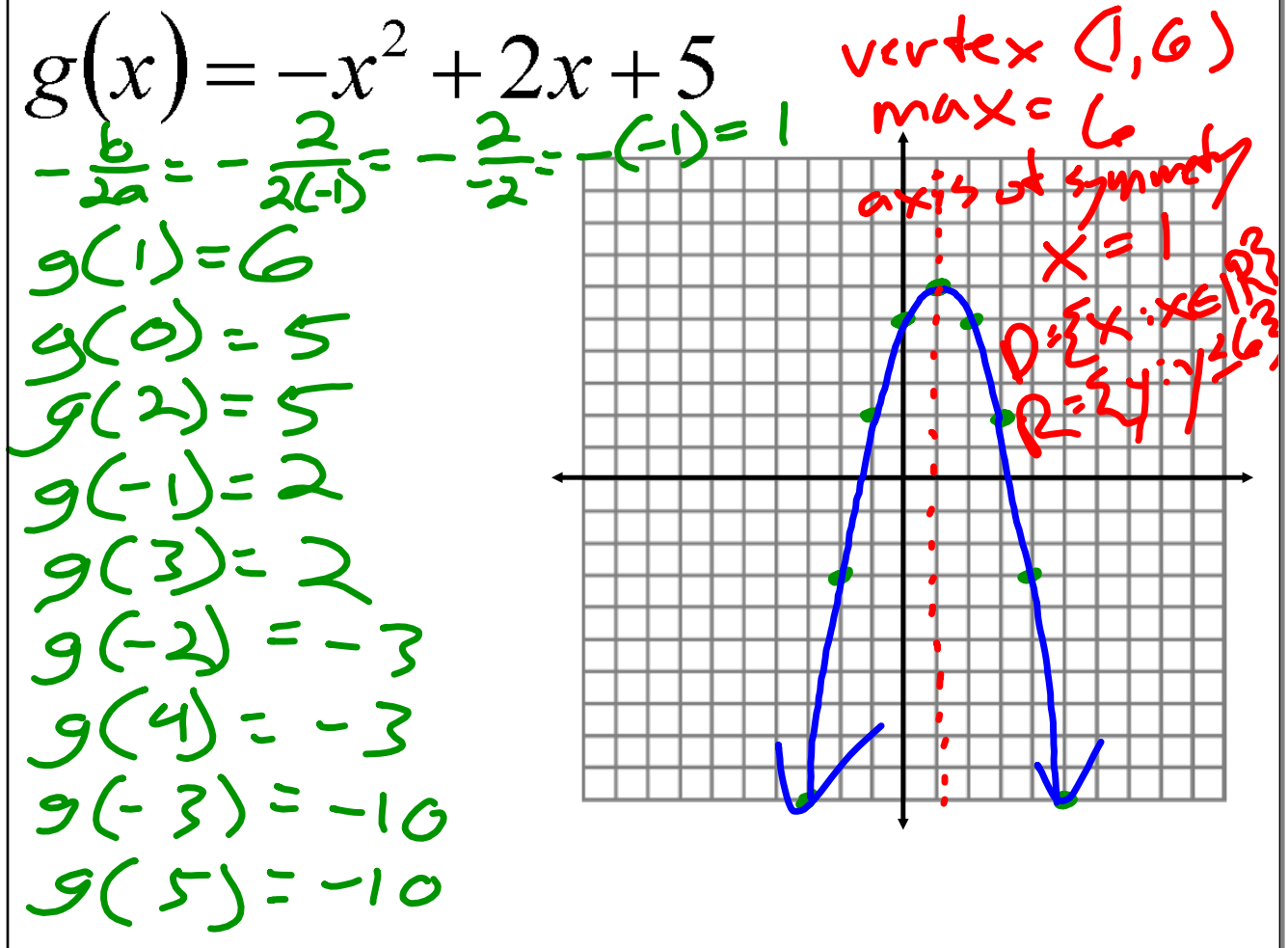


HW: Worksheet

check answers on [www.desmos.com/calculator](http://www.desmos.com/calculator)



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

$$-\frac{b}{2a} = -\frac{0}{2(3)} = -\frac{0}{6} = 0$$

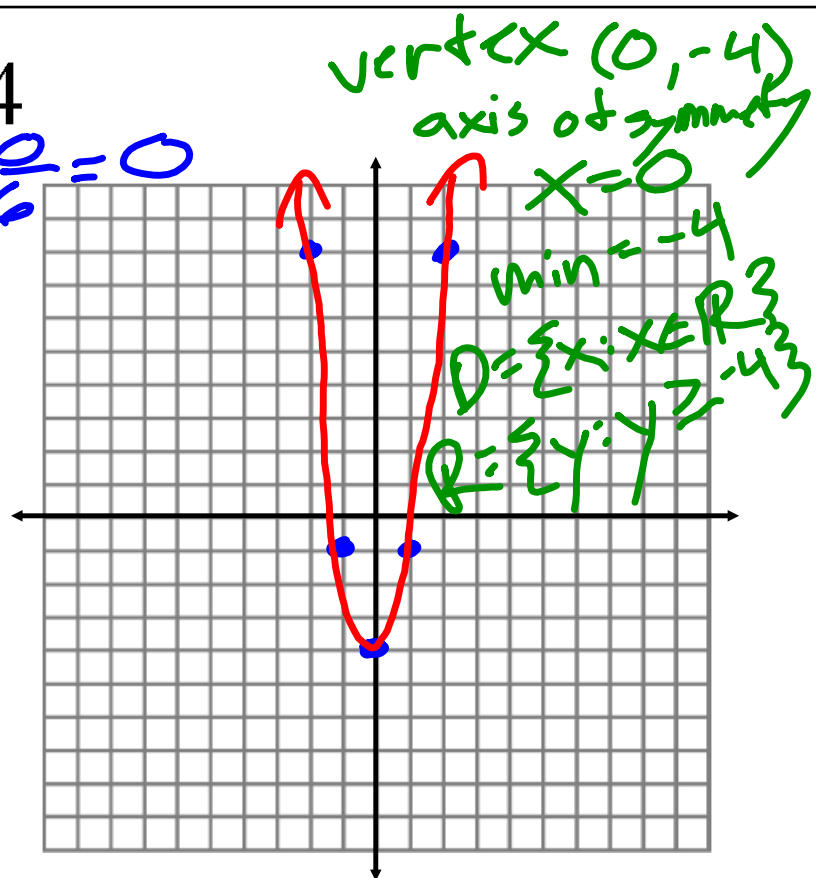
$$h(0) = -4$$

$$h(1) = -1$$

$$h(-1) = -1$$

$$h(2) = 8$$

$$h(-2) = 8$$



Graph. List the axis of symmetry, max/min value, domain, and range.

$$1) w(x) = -5x^2$$

$$2) g(x) = -2x^2 - 12x - 10$$

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

$$4) f(x) = x^2 - x + 1$$

check on [desmos.com/calculator](https://www.desmos.com/calculator)

$$1) w(x) = -5x^2$$

$$-\frac{0}{2(-5)} = 0$$

$$w(0) = 0$$

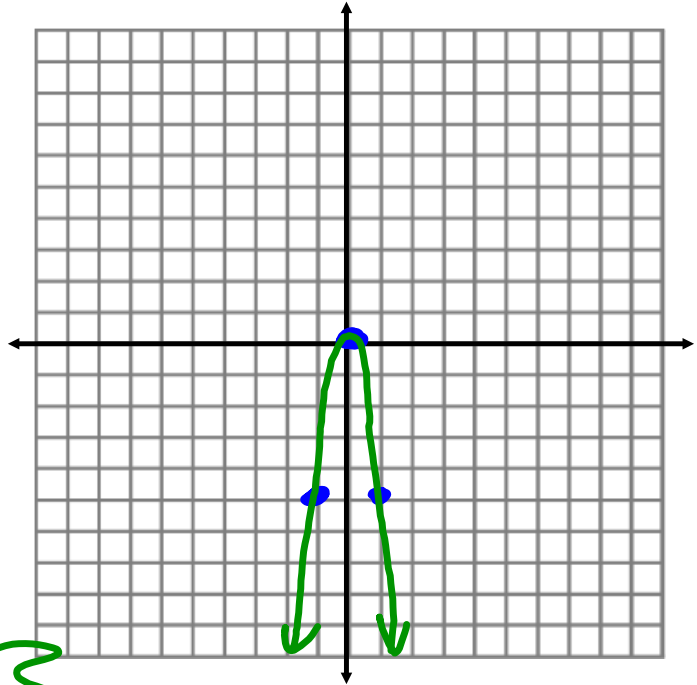
$$w(1) = -5$$

axis of symm  
 $x = 0$

$$\max = 0$$

$$D = \{x : x \in \mathbb{R}\}$$

$$R = \{y : y \leq 0\}$$



$$2) g(x) = -2x^2 - 12x - 10$$

$$-\frac{-12}{2(-2)} = -\frac{-12}{-4} = -3$$

$$g(-3)$$

$$-2(-3)^2 - 12(-3) - 10$$

$$-2(9) + 36 - 10$$

$$-18 + 36 - 10$$

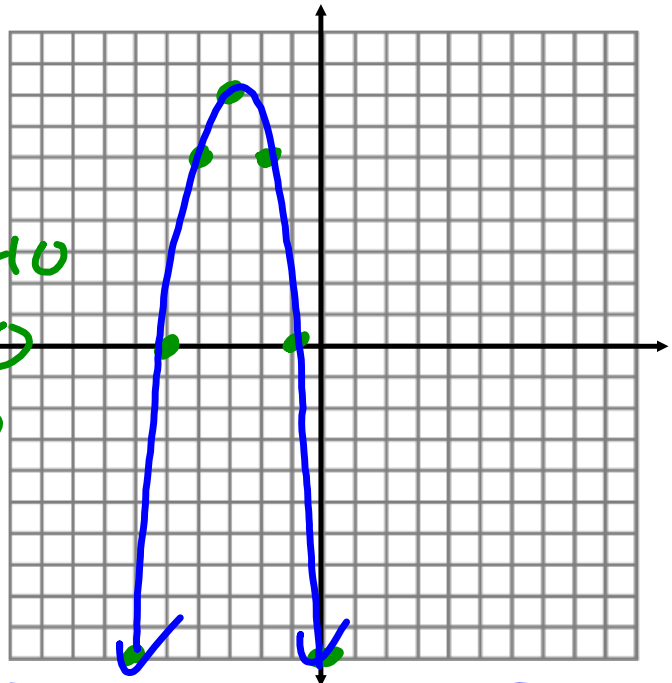
$$18 - 10$$

$$8$$

axis of sym

$$x = -3$$

$$\max = 8$$



$$D = \{x : x \in \mathbb{R}\}$$

$$R = \{y : y \leq 8\}$$

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

$$-\frac{0}{2x} = 0$$

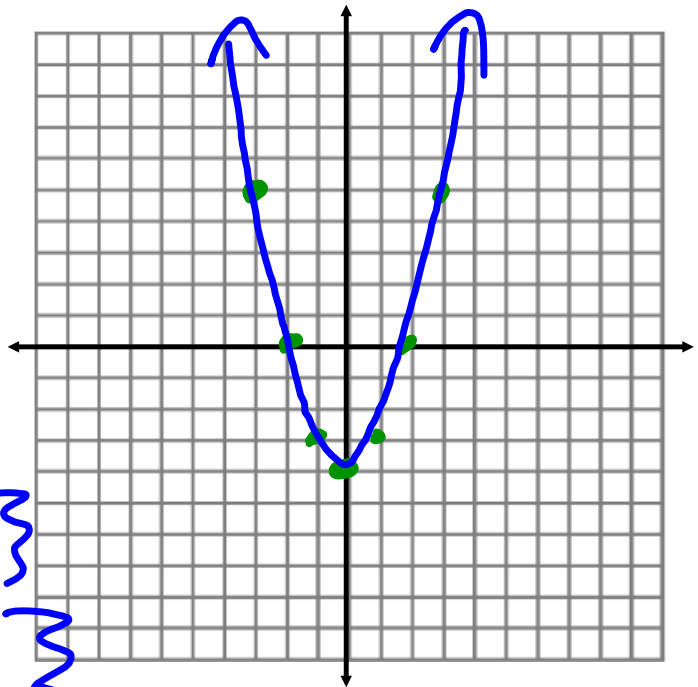
$$b(0) = -4$$

axis of symmetry  
 $x = 0$

$$\text{min} = -4$$

$$D = \{x : x \in \mathbb{R}\}$$

$$R = \{y : y \geq -4\}$$



$$4) f(x) = x^2 - x + 1$$

$$-\frac{b}{2a} = -\frac{-1}{2(1)} = -\frac{-1}{2} = \frac{1}{2}$$

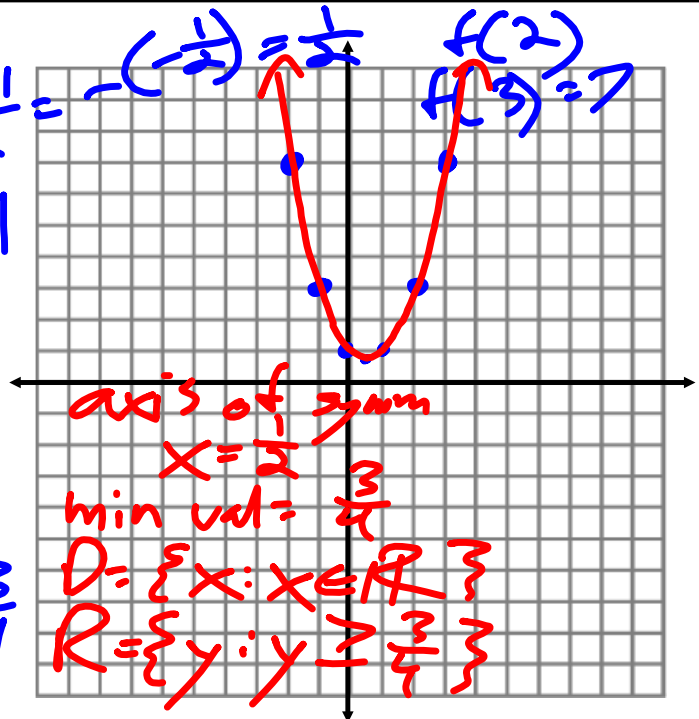
$$f\left(\frac{1}{2}\right) = \left(\frac{1}{2}\right)^2 - \frac{1}{2} + 1$$

$$\frac{1}{4} - \frac{1}{2} + 1$$

$$\frac{1}{4} - \frac{2}{4}$$

$$-\frac{1}{4} + 1$$

$$\left(\frac{1}{2}, \frac{3}{4}\right) \quad -\frac{1}{4} + \frac{4}{4} = \frac{3}{4}$$





February 2, 2022

