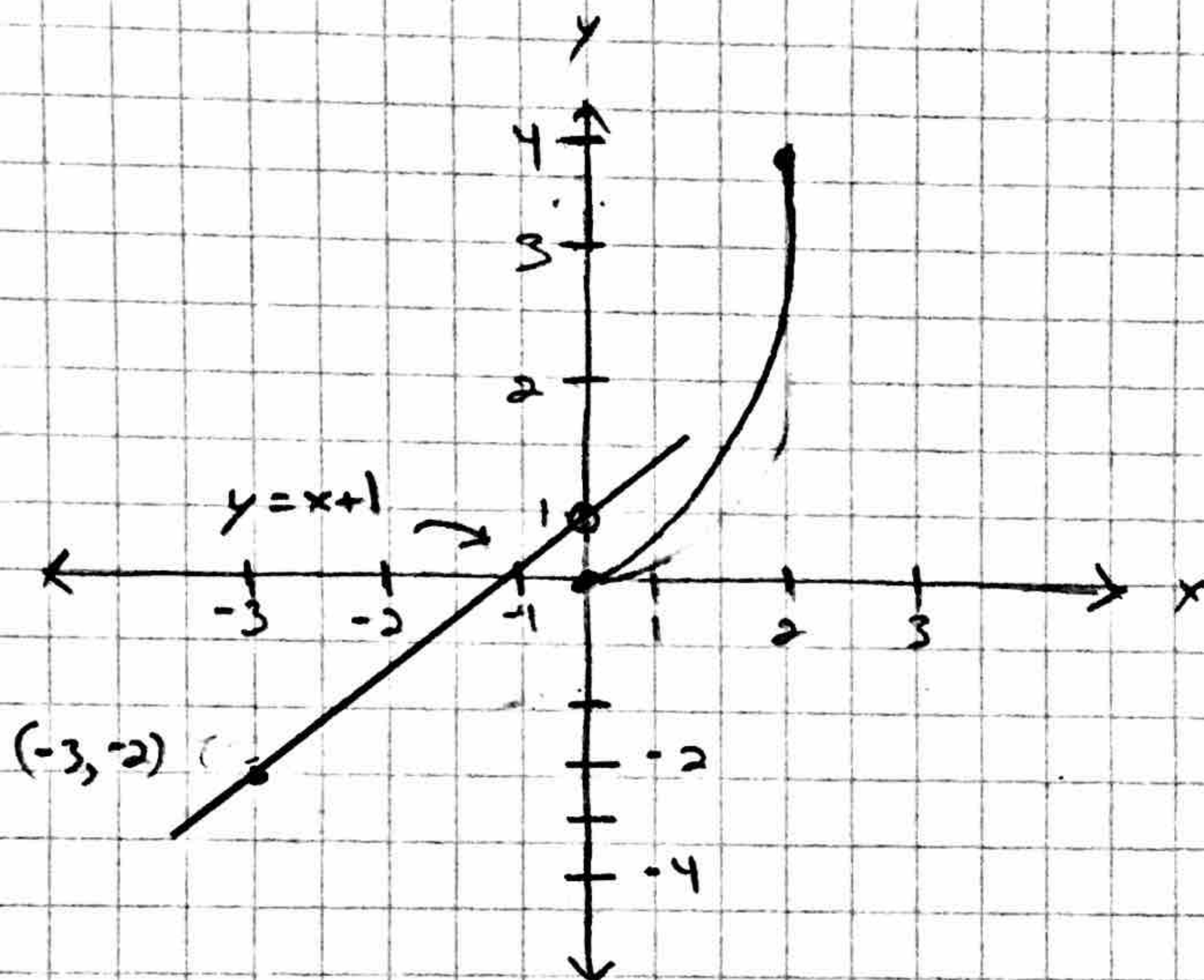


Graphing Piecewise Defined Functions

$$f(x) = \begin{cases} x+1, & -3 \leq x < 0 \\ x^2, & 0 \leq x \leq 2 \end{cases}$$



① Set points (x, y)

$\leq \bullet <$

$$y = x + 1 \quad \text{if } -3 \leq x < 0$$

$$y = (-3) + 1 = -2 \quad (-3, -2)$$

$$y = (0) + 1 = 1 \quad (0, 1)$$

$$y = x^2 \quad \text{if } 0 \leq x \leq 2$$

$$y = (0)^2 = 0 \quad (0, 0)$$

$$y = (2)^2 = 4 \quad (2, 4)$$

Input x values

$$f(x) = \begin{cases} x, & -3 \leq x < 0 \\ 2, & 0 < x < 1 \\ \sqrt{x}, & 1 \leq x < 4 \end{cases}$$

$$y = x$$

$$y = 2$$

$$y = \sqrt{x}$$

$$\sqrt{1} = 1, \sqrt{4} = 2$$

$$y = -3, (-3, -3)$$

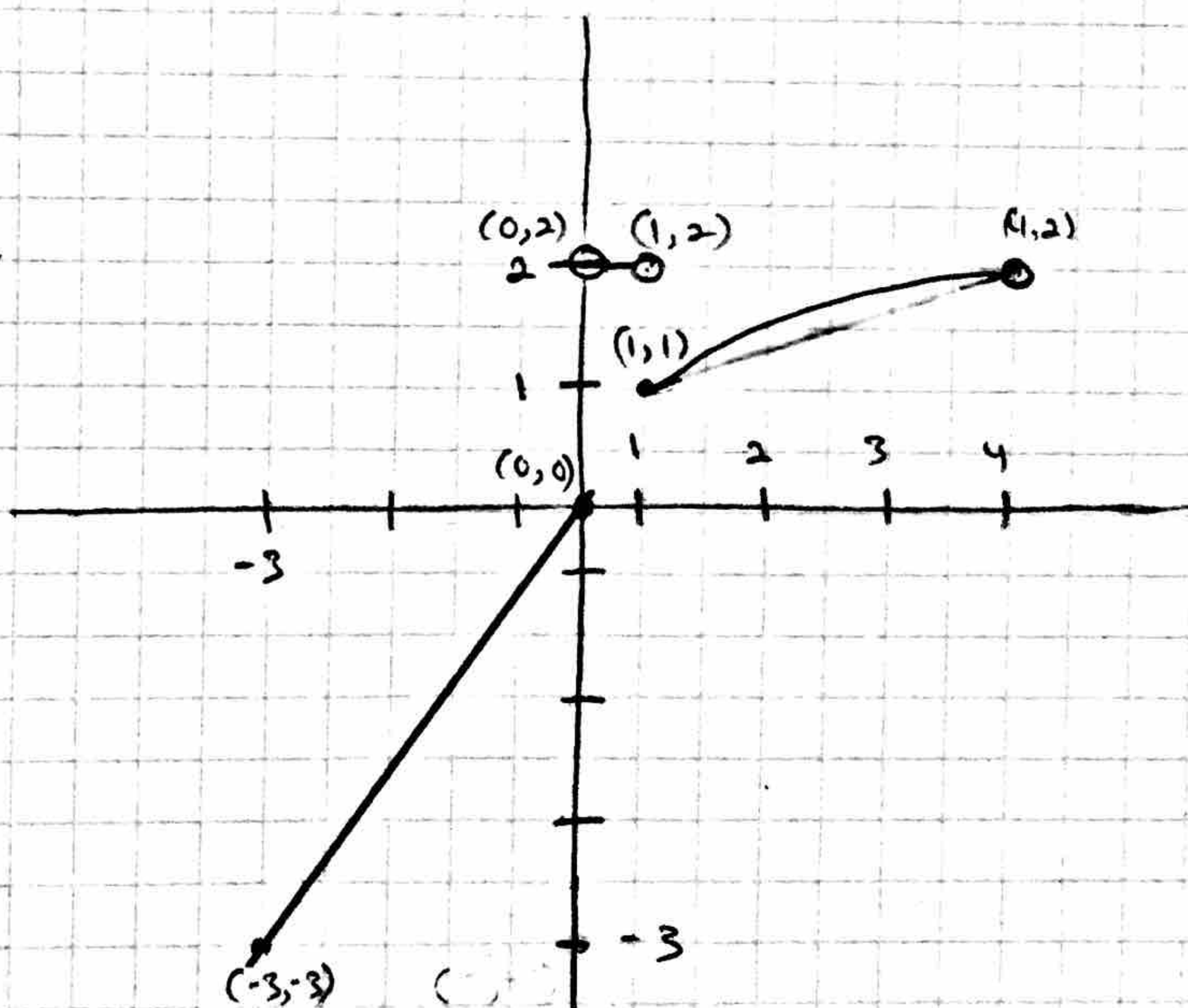
$$y = 2, (0, 2)$$

$$y = 1, (1, 1)$$

$$y = 0, (0, 0)$$

$$y = 2, (1, 2)$$

$$y = 2, (4, 2)$$



$$f(x) = \begin{cases} y = -2, & x \leq -3 \\ y = 4 - x, & -3 < x < 0 \\ y = x, & x \geq 0 \end{cases}$$

$4 - (0) = 4 \quad (0, 4)$
 $4 + (-3) = \boxed{7} \quad (-3, 7)$
 $y = 0 \quad (0, 0)$

or

$$y = -x + 4$$

