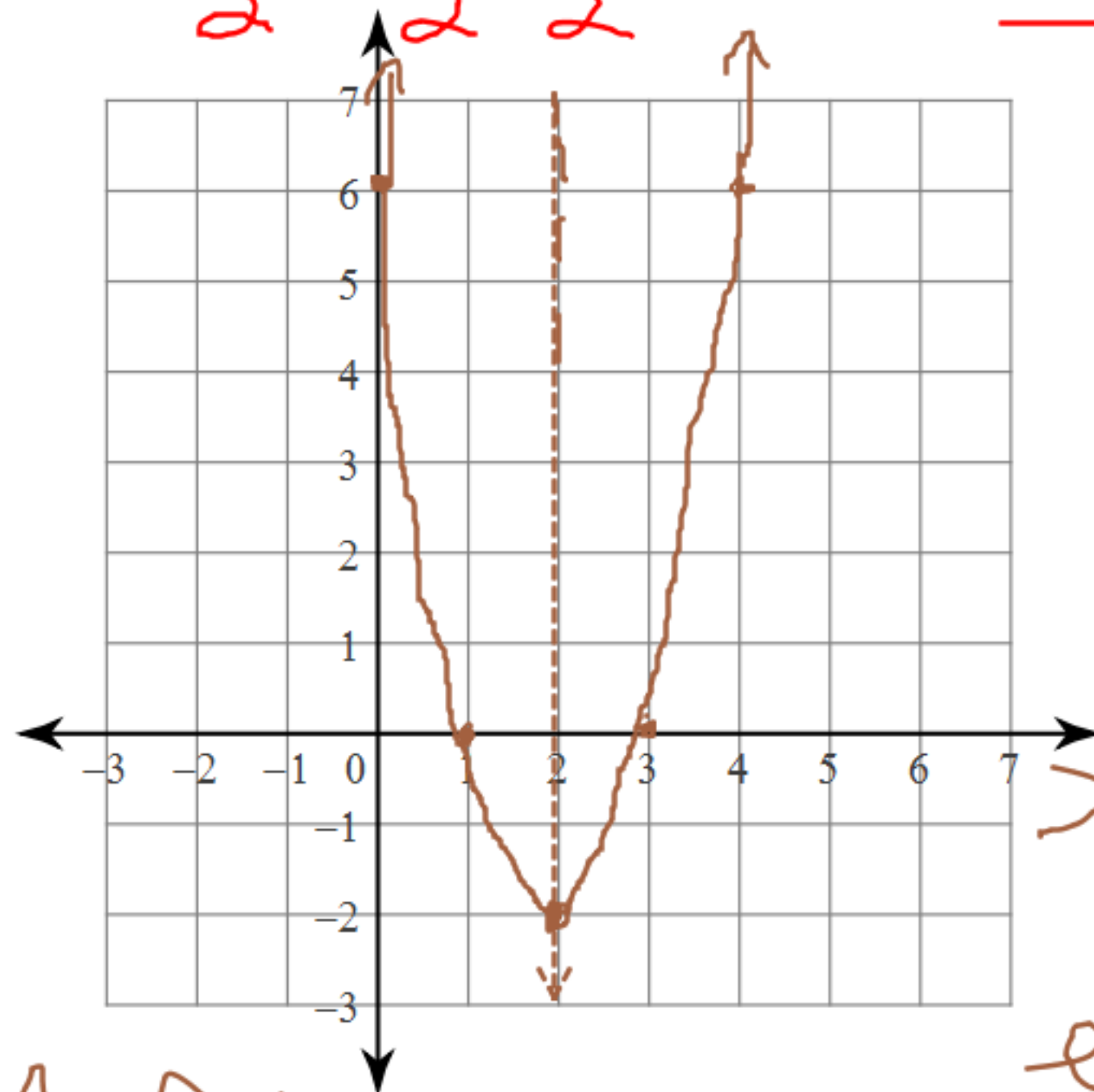


Sketch the graph of each function.

y-intercept (0, 6)

$$1) y = \frac{2x^2}{2} - \frac{8x}{2} + \frac{6}{2}$$



A of S: $x = 2$
 vertex (2, -2)

vertex form: $y = 2(x - 2)^2 - 2$

$$\Rightarrow 2(x^2 - 4x + 3) - 2$$

$$2(x^2 - 3x - 1x + 3)$$

$$2[x(x-3) - 1(x-3)]$$

$$2(x-3)(x-1) = 0$$

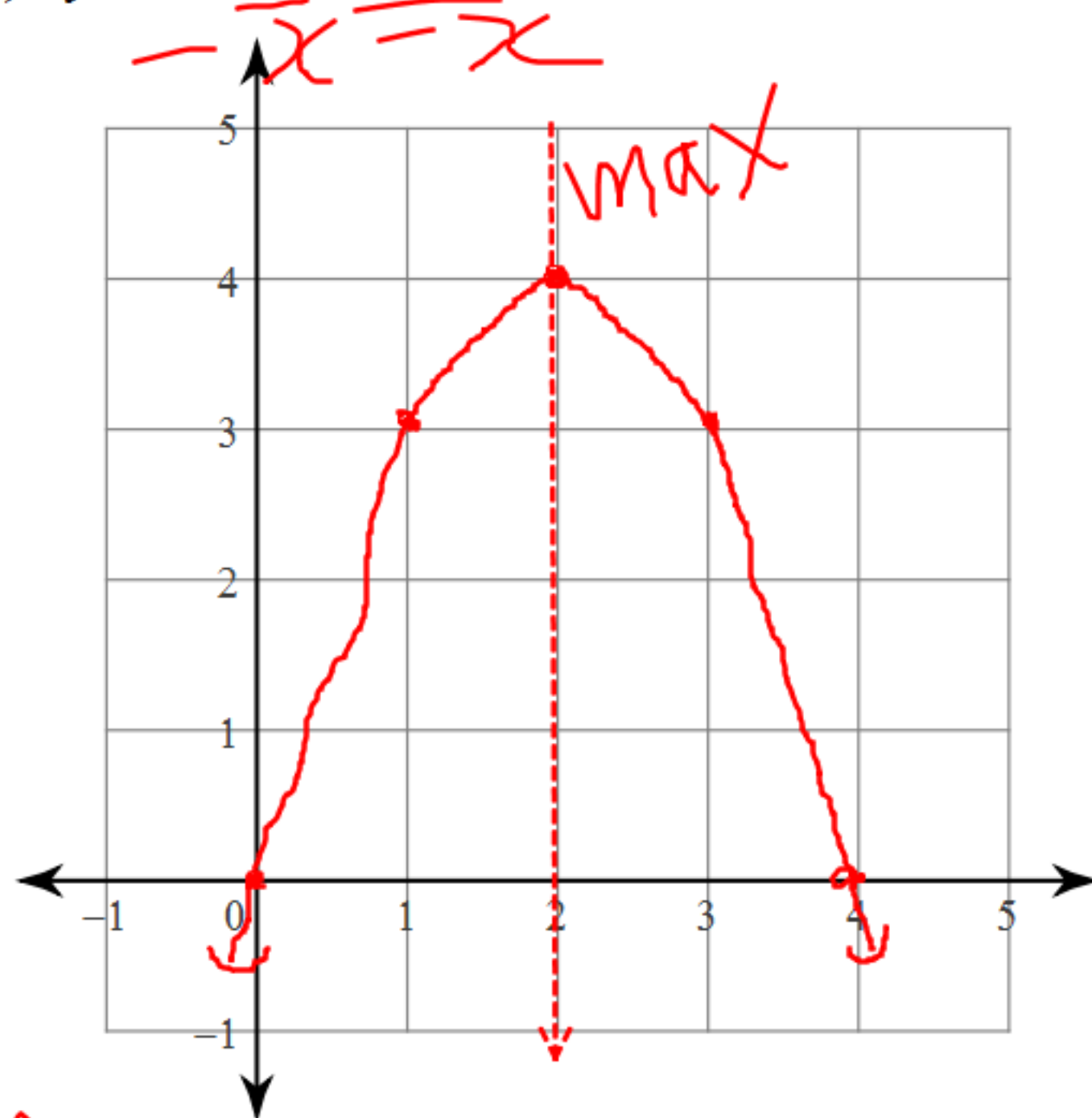
either $x - 3 = 0$ or $x - 1 = 0$

$$x = 3 \quad x = 1$$

$$SS \{3, 1\}$$

Sketch the graph of each function.

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



A of S: $x = 2$
 Vertex: $(2, 4)$

$$(-x)(x - 4) = 0$$

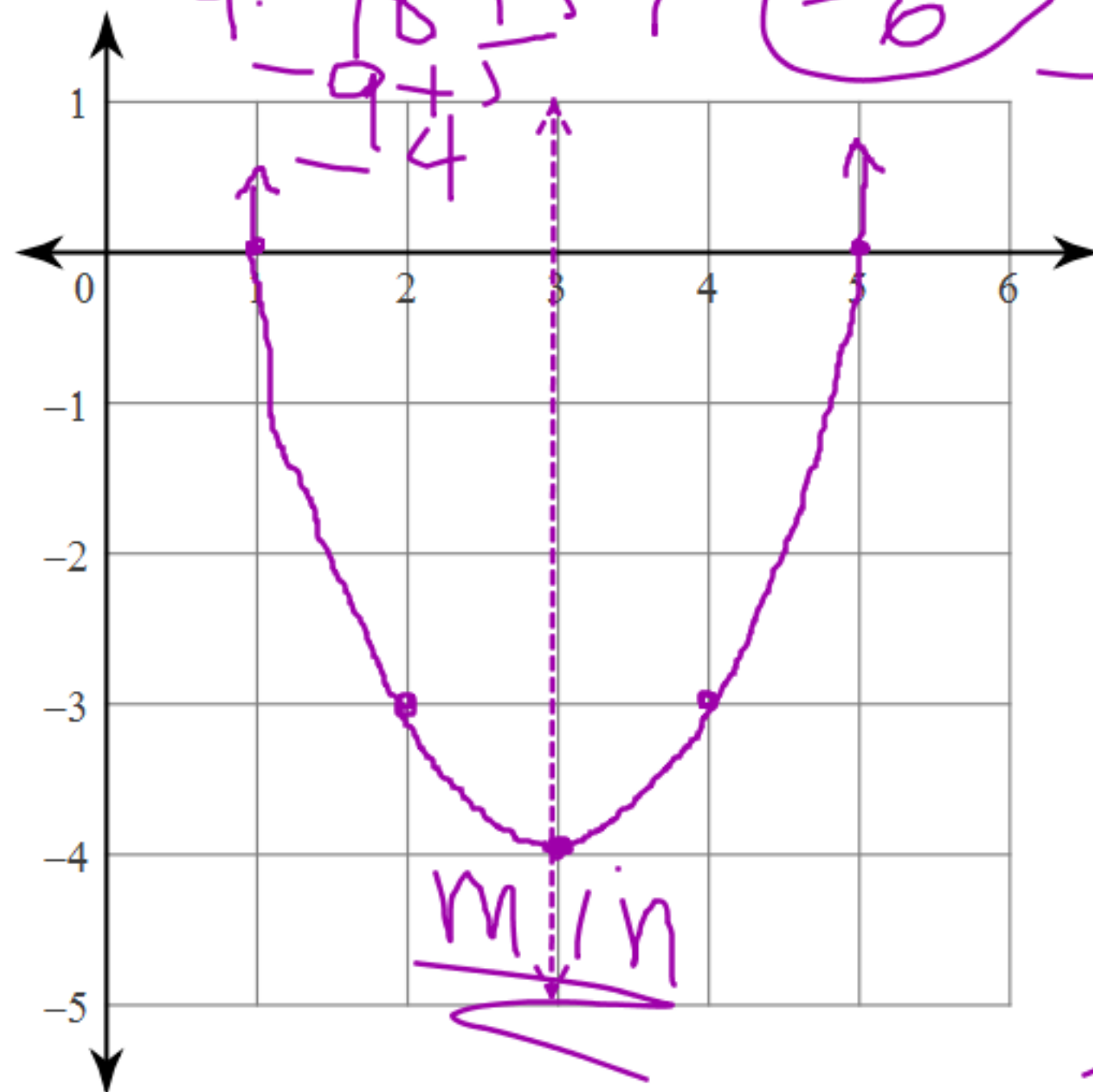
either $-x = 0$ or $x - 4 = 0$
 $\Rightarrow x = 0$ or $x = 4$
 $\{0, 4\}$

vertex form

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

Sketch the graph of each function.

3) $y = x^2 - 6x + 5$



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

$x^2 - 6x + 5 = 0$

$x^2 - 5x - 1x + 5 = 0$

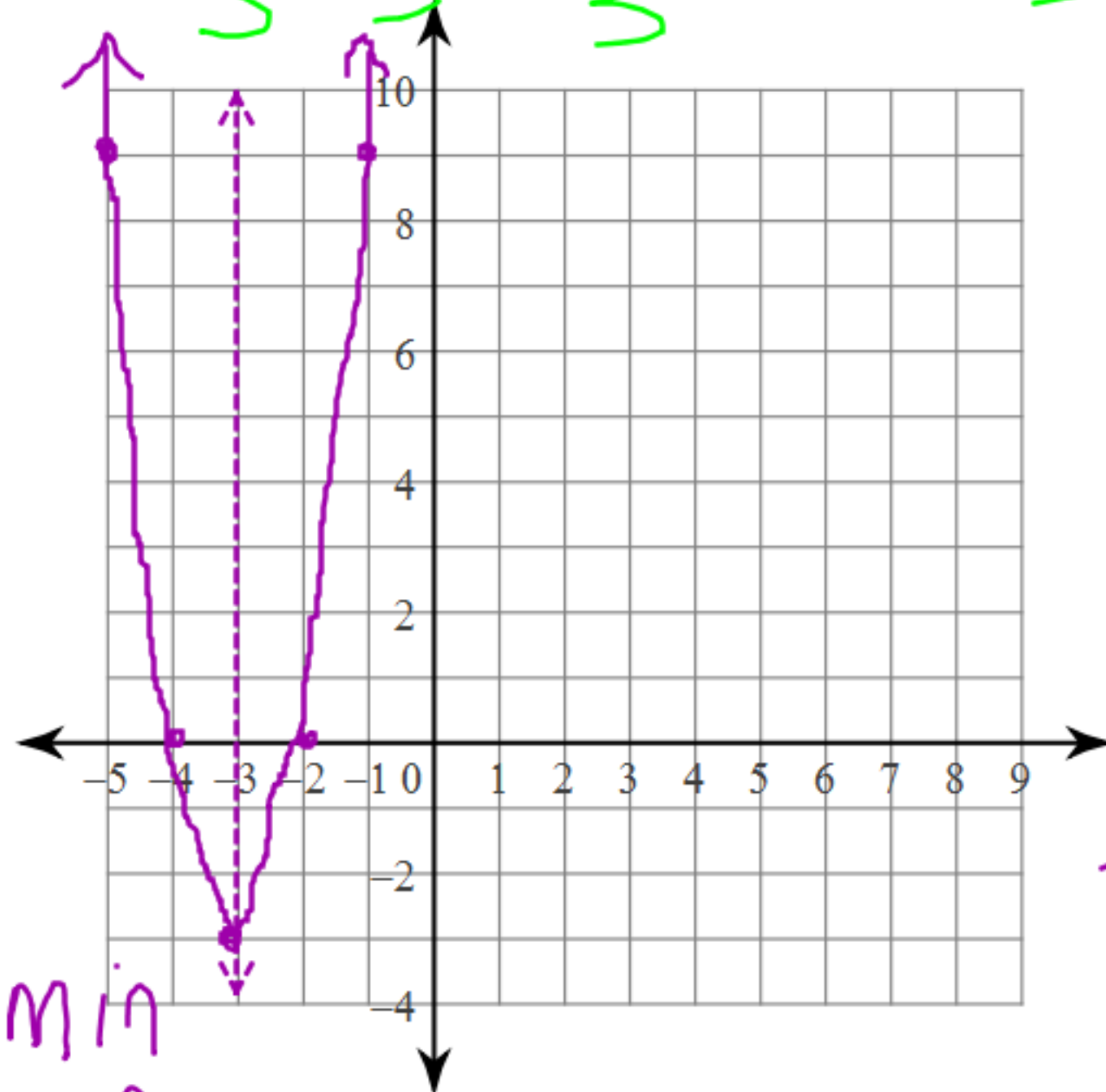
$x(x-5) - 1(x-5) = 0$
 $(x-5)(x-1) = 0$

either $x-5=0$ or $x-1=0$

A of 5: $x=3$
 Vertex $(3, -4)$
 y-intercept $(0, 5)$
 $x=5$
 $x=1$

Sketch the graph of each function.

$$4) y = \frac{3x^2}{3} + \frac{18x}{3} + \frac{24}{3}$$



$$\Rightarrow 3(x^2 + 6x + 8)$$

$$= 3[x^2 + 2x + 4x + 8] - 6$$

$$3[x(x+2) + 4(x+2)] - 6$$

$$3(x+2)(x+4) - 6$$

either $x+2=0$ or $x+4=0$

$$x = -2$$

$$x = -4$$

A of S: $x = -3$

Vertex $(-3, -3)$

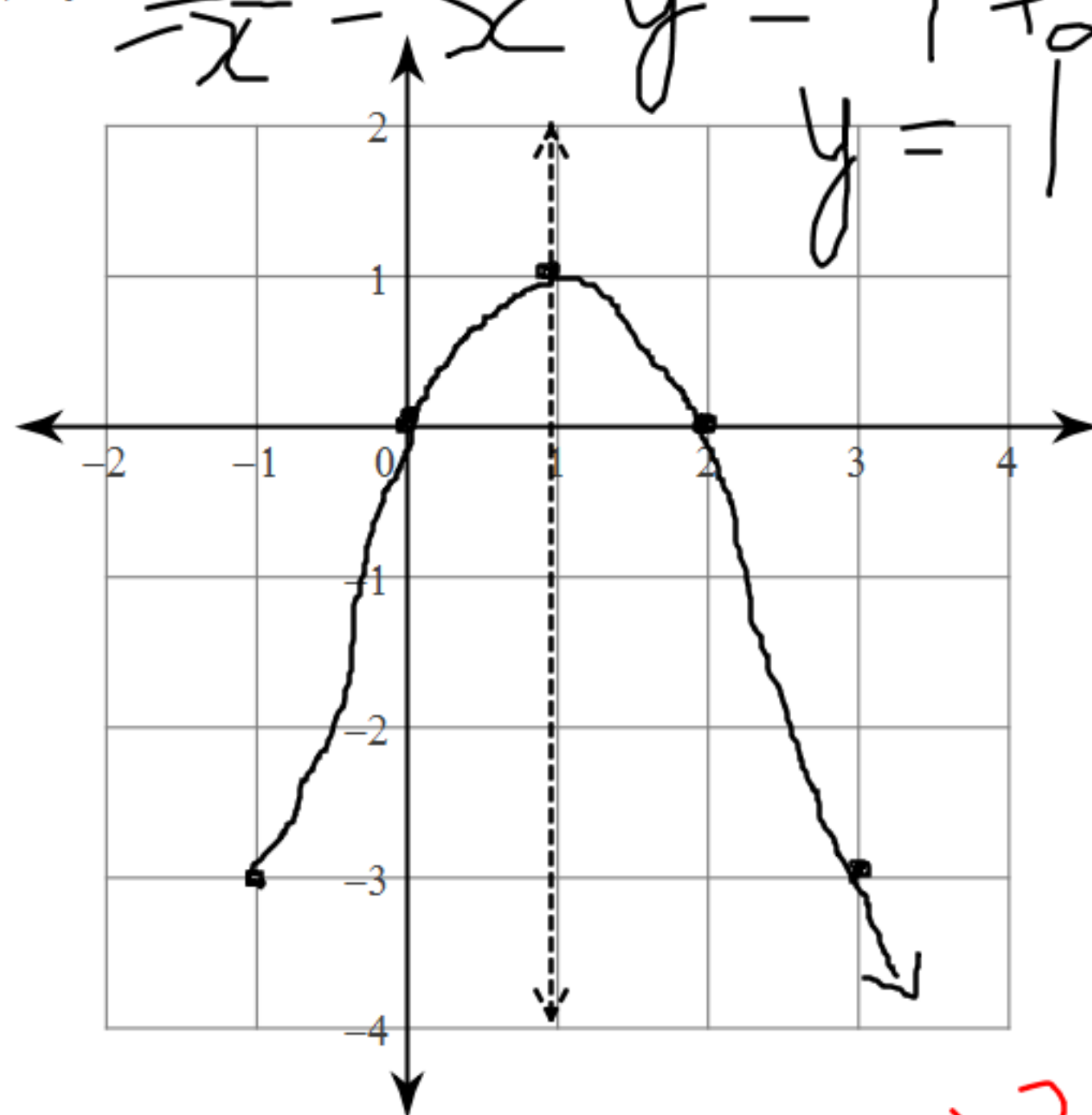
vertex form

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

S.S. $\begin{pmatrix} -2 & -4 \end{pmatrix}$

Sketch the graph of each function.

5) $y = -x^2 + 2x$



$$y = -(1)^2 + 2(1)$$

$$y = -1 + 2$$

$$y = 1$$

$$y = (-x)(x-2)$$

Either $-x = 0$

$$\text{OR } x - 2 = 0$$

$$x = 0 \text{ or } x = 2$$

$$SS = \{0, 2\}$$

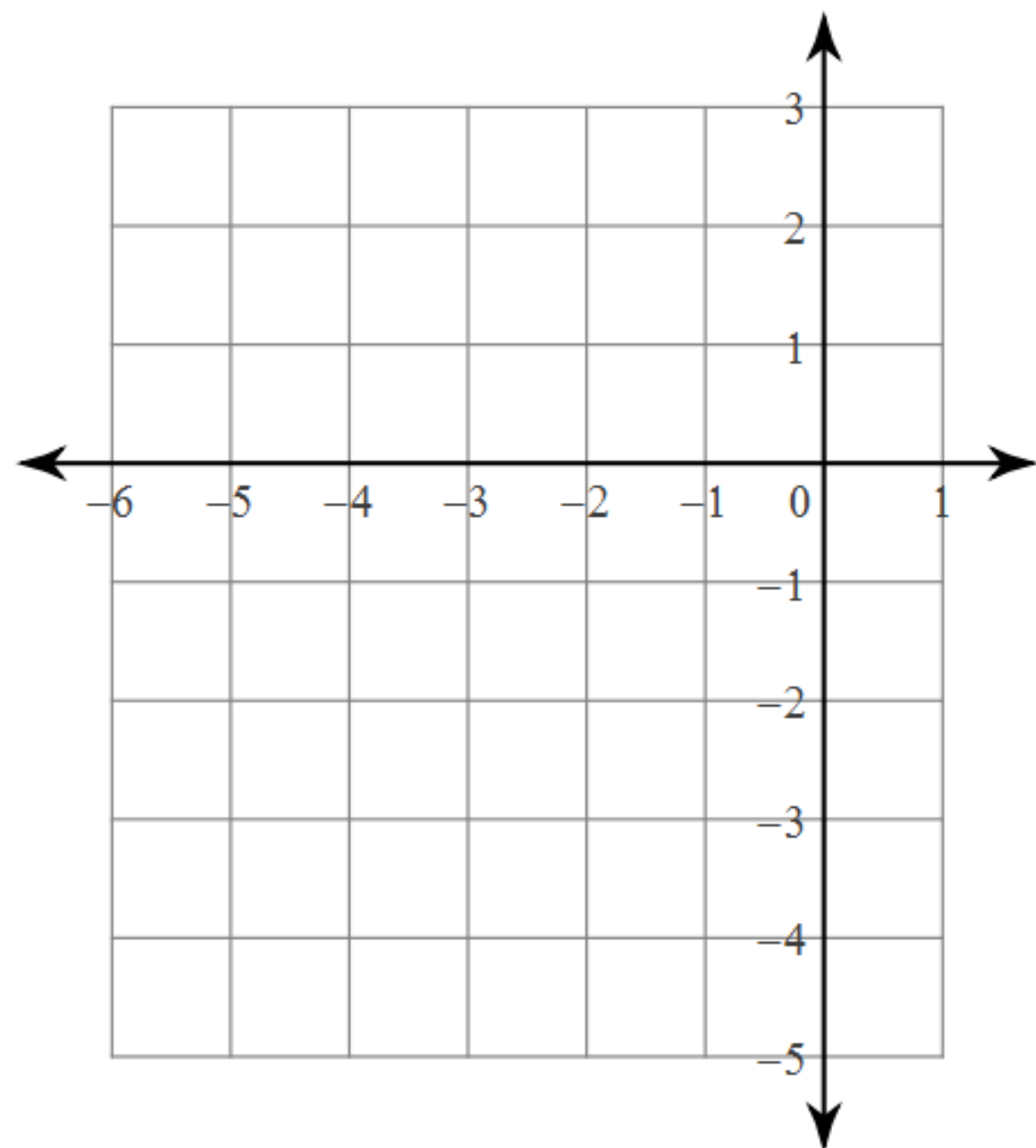
$$\text{A of } S \quad x = 1$$

$$\text{vertex} = (1, 1)$$

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

Sketch the graph of each function.

6) $y = -x^2 - 8x - 15$



$$y = \frac{-1}{-1} \frac{-8}{-1} \frac{-15}{-1} \text{ (X) } 15$$

$$y = -1(x^2 + 8x + 15)$$

$$y = -1(x^2 + 5x + 3x + 15)$$

$$y = -1 \left[\overset{1x}{x}(x+5) + \overset{3}{3}(x+5) \right]$$

$$y = -1(x+5)(x+3)$$

Either $x+5=0$ or $x+3=0$
 $\therefore x = -5$ or $x = -3$

SS $\{-5, -3\}$