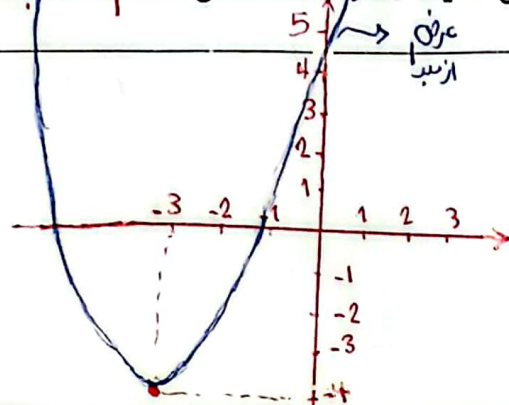




(ب)

الف) $a > 1 \rightarrow \min U$

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

$$y: 9 - 18 + 5 = -4$$

$[-1, -4]$

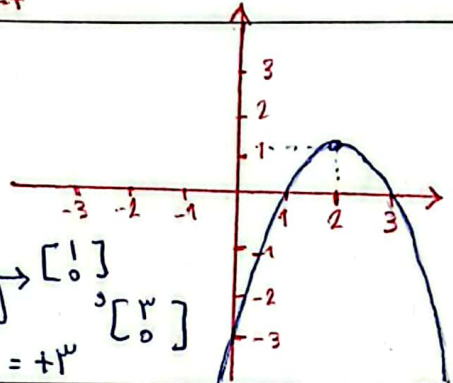
(ب) شایع با محور x ها

$$y=0$$

$$x^2 + 2x - 3 = 0$$

$$x^2 + 2x - 3 = 0 \rightarrow x = 1, x = -3$$

$$-1 + 4 - 3 = 0 \rightarrow x = 1, x = -3$$



الف) $a < 0 \rightarrow \max U$

$$x: \frac{-b}{2a} = \frac{-(-4)}{2 \cdot (-1)} = \frac{4}{-2} = -2$$

$$y: -4 + 1 - 3 = -6$$

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(ج) باید دلتا منفی $\Delta < 0$ بود

$$\Delta = b^2 - 4ac \Rightarrow 9 - 4a < 0$$

$$a > \frac{9}{4}$$

(ب) باید دلتا مساوی ۰ برابر ضرب بود

$$\Delta = b^2 - 4ac$$

$$9 - 4a = 0$$

$$9 = 4a$$

$$\frac{9}{4} = a$$

الف) باید دلتا $\Delta > 0$ مثبت باشد

$$\Delta = b^2 - 4ac$$

$$\Delta = (-3)^2 - 4(1a) > 0$$

$$9 - 4a > 0$$

$$9 > 4a$$

$$a < \frac{9}{4}$$

باید دلتا نامنفی باشد $\Delta \geq 0$

$$b^2 - 4ac \rightarrow 9 - 4a \geq 0$$

$$a \leq \frac{9}{4}$$

$$(x^2 - \frac{1}{x})^2 = \frac{5}{x}$$

$$x^2 - \frac{1}{x} = \pm \sqrt{\frac{5}{x}}$$

$$\frac{1}{x} + \frac{\sqrt{5}}{x} = \frac{1}{x} - \frac{\sqrt{5}}{x}$$

$$x = \frac{1 + \sqrt{5}}{2}, x = \frac{1 - \sqrt{5}}{2}$$

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

$$x^2 - x = 1$$

$$x^2 - x + \frac{1}{x} = 1 + \frac{1}{x}$$

$$x^2 - x + \frac{1}{x} = 1 + \frac{1}{x}$$

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

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

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

$$x = 1 - \sqrt{2}, x = 1 + \sqrt{2}$$

$$x = 1 - \sqrt{2}, x = 1 + \sqrt{2}$$

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

$$x-1 = \pm \sqrt{2}$$

$$x^2 + x - 4 = 0$$

$$\Delta = b^2 - 4ac$$

$$1 - 4(-4 \cdot 1) = 17$$

$$x = \frac{-b \pm \sqrt{\Delta}}{2a}$$

$$x = \frac{-1 \pm \sqrt{17}}{2}$$

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

$$\Delta = b^2 - 4ac$$

$$4 - 4(1 \cdot (-1)) = 8$$

$$x = 1 - \sqrt{2}, x = 1 + \sqrt{2}$$

$$x = 1 - \sqrt{2}, x = 1 + \sqrt{2}$$

$$x = \frac{-b \pm \sqrt{\Delta}}{2a}$$

$$x = \frac{2 \pm 2\sqrt{2}}{2} \Rightarrow x = 1 \pm \sqrt{2}$$

