

γ_0

آرمینا کبری کره هم نجیب C

(الف) $a > 0 \rightarrow \min: \left[\begin{array}{l} -\frac{b}{2a} \\ -\frac{\Delta}{4a} \end{array} \right] \quad x_{\min} = \frac{1}{2} \quad y_{\min} = \frac{-1}{1} = -1$
 $\min = (1, -1)$

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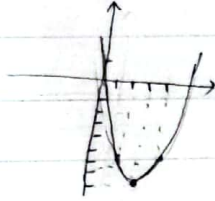
(ب) $a < 0 \rightarrow \max: \left[\begin{array}{l} -\frac{b}{2a} \\ -\frac{\Delta}{4a} \end{array} \right] \quad x_{\max} = \frac{-3}{-2} = \frac{3}{2} \quad y_{\max} = \frac{+21}{-1} = -\frac{21}{1}$
 $\max = \left(\frac{3}{2}, -\frac{21}{1} \right)$

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(الف) $x_0 = \frac{1}{2} = \frac{1}{2} \quad y_0 = -1$

$\frac{x}{y} = \frac{1/2}{-1} = -\frac{1}{2}$

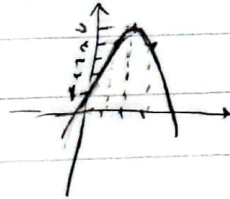
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(ب) $x_0 = \frac{-1}{-2} = \frac{1}{2} \quad y_0 = -\left(\frac{1}{2} + 1 + 1\right) = -2$

$\frac{x}{y} = \frac{1/2}{-2} = -\frac{1}{4}$



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$\alpha + \beta = 1$
 $\alpha \beta = -x$

این عبارت قابل تبدیل است $\rightarrow K^2 - xK - x$

$$\frac{K^2 - xK - x}{(K^2 - xK - x) - (K^2 - xK - x)} = \frac{K^2 - xK - x}{(K+x) - (K+x)}$$

$$\frac{(K+x)K - x - x}{(K+x) - (K+x) - 2K - 1}$$

$$\frac{(K+x)K - 2x}{(K+x) - 2K - 1}$$

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$K+x=0 \rightarrow K=-x$
 $2K+1=0 \rightarrow K=-\frac{1}{2}$

باقی ماند به صورت $K = -\frac{1}{2}$

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$(\sqrt{x} - \sqrt{y})^2 = 1 \rightarrow x + y - 2\sqrt{xy} = 1 \quad 2m - 2\sqrt{m} - 1 = 0$
 $\sqrt{m} = t \rightarrow 2t^2 - 2t - 1 = 0 \rightarrow (t-1)(2t+1) = 0$

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$2m^2 - 2m - 1 = 0$

$$\frac{-m}{2} = \frac{-1}{2}$$

$t=1 \rightarrow m=1$
 $t = -\frac{1}{2} \rightarrow m = \frac{1}{4}$

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$$|\alpha - \beta| \leq \frac{\sqrt{\Delta}}{\gamma} = \frac{\sqrt{m^2 + 4m - 4m}}{\gamma} = \frac{\sqrt{(m-2)^2}}{\gamma} = \frac{|m-2|}{\gamma} \rightarrow \text{شبهه}$$

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$m \rightarrow$ انتخابی، هر دو

$$|m(m-2)| = \frac{4}{\gamma} \rightarrow m(m-2) \leq \frac{4}{\gamma} \rightarrow m^2 - 2m - \frac{4}{\gamma} \leq 0$$

$$(m-2)(m+1) \leq 0$$

$$m(m-2) = -3$$

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

$m = 2, m = -1$ $y = x^2 - mx + 1 \rightarrow x^2 - 2x + 1 \rightarrow x^2 - 2x + 1 = 0$

$$y_{min} = \frac{-\Delta}{4a} = \frac{-4 + 4a^2}{4a} = \frac{1}{a} \rightarrow 4a^2 - 4a - 4 \leq 0$$

$$a^2 - a - 1 \leq 0$$

$$(a-2)(a+1) \leq 0$$

$a \leq 2$ غنی چون a بزرگتر باشد
 $a \geq -1$ سعی min باشد بزرگتر

$$\frac{\sqrt{\Delta}}{|a|} \leq 2 \rightarrow \frac{\sqrt{a^2 + 4a - 4a}}{|a|} = \frac{\sqrt{(a-1)^2}}{|a|} = \frac{|a-1|}{|a|} \leq 2 \rightarrow a \leq 2, a \geq -1$$

$$\rightarrow x^2 - 4x + 3 \leq 0 \rightarrow x \leq 1, x \geq 3$$

غنی چون
 بزرگتر باشد بزرگتر

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$$x^2 - 1 \cdot x + b \leq 0 \rightarrow \sqrt{\Delta} \leq 2 \rightarrow \sqrt{1 - 4b} \leq 2 \rightarrow 1 - 4b \leq 4 \rightarrow b \geq -3/4$$

$$x^2 - 1 \cdot x + 2 \leq 0 \rightarrow x \leq 2, x \geq 4$$

$$4x^2 - 4x + 1 \leq 0$$

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$$y = -ax^2 + ax + 2 \rightarrow S(\frac{1}{4}, \frac{a}{4} + 2)$$

$$y = 2bx^2 - bx - 1 \rightarrow S(\frac{1}{4}, \frac{-b}{4} - 1)$$

$$2b \times \frac{1}{4} - b(\frac{1}{4}) - 1 \leq \frac{a}{4} + 2 \rightarrow \frac{a}{4} \leq -2 \rightarrow a \leq -8$$

$$\frac{-a}{14} + \frac{a}{4} + 2 = \frac{-b}{4} - 1 \rightarrow \frac{-b}{4} = \frac{14}{14} \rightarrow b = -4$$

$$b - a \leq -4 - (-8) = 4$$

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$$\alpha + \beta = \frac{-f}{2a} \quad \alpha\beta = \frac{b}{2a} \rightarrow 2\alpha^2 + \beta = \beta \rightarrow \alpha = \pm \frac{1}{2}$$

$$\alpha = \frac{1}{2} \rightarrow \frac{1}{2} + \beta = \frac{-f}{2a} \rightarrow \beta = -1 \rightarrow \beta < \alpha$$

$$\alpha = \frac{-1}{2} \rightarrow \frac{-1}{2} + \beta = \frac{f}{2a} \rightarrow \beta = 1 \checkmark$$

$$x_1 = \frac{-f}{2a} = \frac{4}{2} = 2 \quad y_1 = \frac{-\Delta}{4a} = \frac{4}{2} = 2$$

دایره دایره

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$$a + b = a^2 + b^2 - 1 \quad a + b - 1 = ab \rightarrow ab \leq a + b - 1$$

$$a + b = (a+b)^2 - 2ab - 1 \quad a + b \leq 5$$

$$5 = 5^2 - 2S - 1 \rightarrow 5^2 - 2S - 1 = 0 \rightarrow (5-2)(5+2) = 0 \rightarrow S = 5$$

$$a + b \leq 5$$

غنی چون a, b طبیعی اند

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