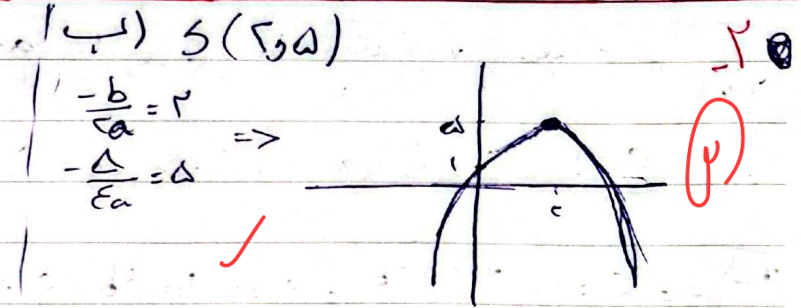
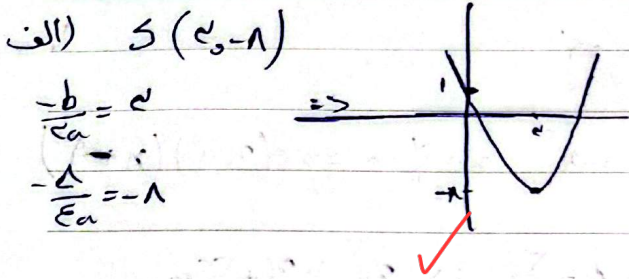


الف) $\min \left| \frac{-b}{\epsilon a} \right| \Rightarrow \min \left| \frac{1}{-1} \right|$ (1)

ب) $\max \left| \frac{-b}{\epsilon a} \right| \Rightarrow \max \left| \frac{9}{\frac{1}{\lambda}} \right|$ ext $\begin{cases} x_s = \frac{-b}{\epsilon a} = \frac{-1}{\frac{1}{\lambda}} = -\lambda \\ y_s = -2\left(\frac{1}{\lambda}\right)^2 + 2\left(\frac{1}{\lambda}\right) - 5 = \frac{-11}{\lambda} \end{cases}$

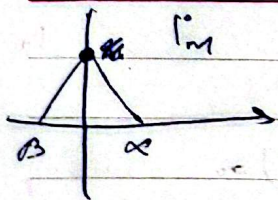


$a\beta = -\epsilon, a + \beta = 1 \Rightarrow \begin{cases} a = \epsilon \\ \beta = -1 \end{cases}$ (2)

$\Rightarrow -\epsilon + \epsilon + 1 - \epsilon = 0 \Rightarrow \epsilon + 1 - \epsilon = 0 \Rightarrow \epsilon = -1$ (3)

$\sqrt{a} - \sqrt{b} = 1 \Rightarrow a + b - 2\sqrt{ab} = 1 \Rightarrow \epsilon m - 2\sqrt{\epsilon m} = 1$ (4)

$\Rightarrow m = 1 \Rightarrow \epsilon m^2 - 2m - 1 = 0 \Rightarrow \frac{\epsilon}{a} = -\frac{1}{\epsilon}$ (5)



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

$\frac{\sqrt{\Delta}}{|\alpha|} \times m \times \frac{1}{\epsilon} = \frac{c}{\epsilon} \Rightarrow \frac{\sqrt{m^2 + \epsilon m - \epsilon m}}{\epsilon} \times m \times \frac{1}{\epsilon} = \frac{c}{\epsilon}$

$\Rightarrow \sqrt{m^2 + \epsilon m - \epsilon m} \times m = c \Rightarrow |m - \epsilon| \times m = c$ $m > \epsilon \rightarrow m - \epsilon = \frac{c}{m}$ $m < \epsilon \rightarrow m - \epsilon = -\frac{c}{m}$

$m < \epsilon \Rightarrow m^2 + \epsilon m - c = 0 \rightarrow \Delta < 0$

$y = x^2 - mx + 1 \Rightarrow \frac{-b}{\epsilon a} = \frac{m}{\epsilon} = \frac{c}{\epsilon}$ $y = x^2 + 2x + 1 \rightarrow a_s = \frac{-b}{\epsilon} = \frac{-1}{\epsilon}$

$$\frac{-\Delta}{\epsilon a} = \frac{\sqrt{\epsilon a^2 - \Delta}}{\epsilon a} \Rightarrow \frac{\epsilon a^2 - \Delta}{\epsilon a} = \frac{\sqrt{\epsilon a^2 - \Delta}}{\epsilon a} \Rightarrow \epsilon a^2 - \Delta = \sqrt{\epsilon a^2 - \Delta} \Rightarrow \Delta a^2 = \sqrt{\epsilon a^2 - \Delta} \quad \checkmark$$

$$\Rightarrow a^2 - \sqrt{\epsilon a^2 - \Delta} = 0 \Rightarrow (a-1)(a+1) = 0 \Rightarrow a = 1 \quad \checkmark$$

$$\frac{\sqrt{\Delta}}{|a|} = \epsilon \Rightarrow \frac{\sqrt{a^2 + \epsilon a + 1 - \epsilon a}}{|a|} = \epsilon \Rightarrow \frac{\sqrt{a^2 + 1}}{|a|} = \epsilon \quad \checkmark$$

$$\Rightarrow \frac{a-1}{|a|} = \epsilon \Rightarrow a-1 = \epsilon \Rightarrow a = 1 + \epsilon \Rightarrow x^2 - \epsilon x + \epsilon = 0 \Rightarrow (x-1)(x+\epsilon) = 0 \quad \checkmark$$

$$\frac{\sqrt{\Delta}}{|a|} = \epsilon \Rightarrow \sqrt{1 - \epsilon b} = \epsilon \Rightarrow 1 - \epsilon b = \epsilon^2 \Rightarrow b = \frac{1 - \epsilon^2}{\epsilon} \Rightarrow x^2 - 1 - \epsilon x + \epsilon = 0 \Rightarrow (x-1)(x+\epsilon) = 0 \quad \checkmark$$

$$\frac{-b}{\epsilon a} = \frac{-a}{\epsilon a} = \frac{1}{\epsilon} \Rightarrow \frac{-\Delta}{\epsilon a} = \frac{a^2 + \Delta}{\epsilon a} \Rightarrow \frac{-b}{\epsilon a} = \frac{b}{\epsilon b} = \frac{1}{\epsilon} \Rightarrow \frac{-\Delta}{\epsilon a} = \frac{b^2 + \Delta}{\epsilon b} \quad \checkmark$$

$$\Rightarrow \epsilon b x^2 - b x - 1 = 0 \Rightarrow x = \frac{1}{\epsilon} \Rightarrow \frac{1}{\epsilon} b - \frac{1}{\epsilon} b - 1 = \frac{a^2 + \Delta}{\epsilon a} \Rightarrow a^2 + \Delta = -\epsilon a \Rightarrow a^2 + \epsilon a = 0$$

$$\Rightarrow a(a + \epsilon) = 0 \Rightarrow a = -\epsilon \quad \checkmark$$

$$\Rightarrow \frac{-b}{\epsilon a} = \frac{b^2 + \Delta}{\epsilon b} \Rightarrow -1 = \frac{b^2 + \Delta}{b} \Rightarrow \epsilon b^2 + \Delta = -b \Rightarrow \epsilon b(b+1) = 0 \Rightarrow b = -1$$

$$\frac{-a}{\epsilon} + \frac{a}{\epsilon} + \epsilon = \frac{b}{\epsilon} - 1 \Rightarrow \frac{1}{\epsilon} = \frac{b}{\epsilon} - 1 \Rightarrow b = 1 - \epsilon \Rightarrow -1 - (-1) = \epsilon \quad \checkmark$$

$$x + \beta = \frac{-\epsilon}{\epsilon a} \Rightarrow x + \beta = \frac{-1}{a} \quad , \quad x\beta = \frac{b}{\epsilon a} \Rightarrow \epsilon a x^2 + \epsilon a \beta x = -1 \quad , \quad \epsilon a x \beta = b$$

$$\Rightarrow \epsilon a x^2 = -1 \Rightarrow x = \pm \frac{1}{\sqrt{\epsilon a}} \Rightarrow \epsilon a x^2 = -1 \Rightarrow \epsilon a \times \frac{1}{a} \times b = -1 \Rightarrow b = -1$$

$$\epsilon a x^2 = -1 \Rightarrow \epsilon a \times \left(-\frac{1}{a}\right) \times b = -1 \Rightarrow b = 1$$

$$b > a \Rightarrow b = -1 \quad \checkmark \Rightarrow x = -\frac{1}{a} \quad , \quad \beta = 1 \quad \checkmark$$

$$a + b = -\frac{b}{a} \Rightarrow a + b = -a^2 - b^2 + 1 \Rightarrow a^2 + a + b^2 + b - 1 = 0$$

$$\Rightarrow a^2 + a - 1 + b^2 + b - 1 = 0 \Rightarrow (a+\frac{1}{2})^2 - \frac{5}{4} + (b+\frac{1}{2})^2 - \frac{5}{4} = 0$$

$$\Rightarrow a < \frac{1}{2} \quad \checkmark \quad b < \frac{1}{2} \quad \checkmark \quad a + b = \frac{1}{\epsilon} \quad \checkmark$$

$$\rightarrow \begin{cases} a^2 + b^2 - 1 = \frac{-b}{a} \rightarrow s^2 - 1 - 1 = s & \text{II} \\ a + b - 1 = ab \rightarrow s - 1 = p & \text{IV} \end{cases}$$

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$$\rightarrow s^2 - 1 - 1 = s \rightarrow s^2 - 2 = s \rightarrow (s-2)(s+1) = 0 \rightarrow \begin{cases} s = -2 \quad \checkmark \\ s = 2 \quad \checkmark \end{cases}$$