

$$-\frac{\Delta}{\epsilon a} = y_{min} \Rightarrow \frac{\epsilon a^2 - 4}{\epsilon} = \frac{v}{\lambda} \Rightarrow \lambda a = \sqrt{\epsilon a^2 - 4v}$$

$$\epsilon \lambda a^2 - \lambda a - v^2 = 0 \Rightarrow \lambda a^2 - v a - \lambda = 0 \Rightarrow a = \frac{v \pm \sqrt{v^2 + 4\lambda}}{2}$$

$$a_1 = v, a_2 = -\frac{v}{\lambda} \Rightarrow \boxed{a = v}$$

ریشه های معادله اول =  $2k-1, 2k+1$

$$\left. \begin{aligned} 2k+1 + 2k-1 &= \epsilon k = a+1 \Rightarrow \epsilon k - 1 = a \\ (2k-1)(2k+1) &= \epsilon k^2 - 1 = a \end{aligned} \right\} \Rightarrow \epsilon k^2 - 1 = \epsilon k - 1$$

$$k=1 \underline{\vee} k=0$$

$$a=2 \underline{\vee} a=1$$

ریشه های معادله دوم =  $2m, 2m+2$       $2m + (2m+2) = \epsilon m + 2 = v a + 1$

$$(2m)(2m+2) = \epsilon m^2 + \epsilon m = b$$

$$a = -1 \Rightarrow m = \frac{-2-1}{\epsilon} = -1 \quad a = 2 \Rightarrow m = \frac{2-1}{\epsilon} = \frac{1}{\epsilon}, b = 2\epsilon$$

$$\Rightarrow b - a = 2\epsilon - 2 = 2(\epsilon - 1) \quad \vee \quad 0 - (-1) = 1$$

$$\frac{a}{-2a} = -\frac{1}{2} \quad \& \quad \frac{b}{\epsilon b} = -\frac{1}{\epsilon} \quad y = \frac{b}{\lambda} - \frac{b}{\epsilon} - 2 = \frac{b}{\lambda} - 2$$

$$y = -\frac{a}{\epsilon} + \frac{a}{2} + 2$$

$$\frac{2b}{\epsilon} - \frac{b}{2} - 2 = 2 + \frac{a}{\epsilon} \quad \frac{b}{2} - \frac{b}{2} - 2 = -2 \Rightarrow a = -16$$

$$a - b = -16 - (-1) = \boxed{-15}$$

$$\alpha + \beta = -\frac{\epsilon}{2\omega\alpha}, \quad \alpha\beta = \frac{\beta}{2\omega\alpha} \Rightarrow \beta = 2\omega\alpha^2\beta \Rightarrow \beta(2\omega\alpha^2 - 1) = 0$$

$\beta = 0 \vee 2\omega\alpha^2 - 1 = 0 \Rightarrow \alpha = \pm \frac{1}{\sqrt{2\omega}}$

$\alpha < 0$

$$-\frac{\epsilon}{2\omega\alpha} - \alpha = \beta \xrightarrow{\alpha = \frac{1}{\sqrt{2\omega}}} -\frac{\epsilon}{\omega} - \frac{1}{\sqrt{2\omega}} = -1 \times$$

$$\xrightarrow{\alpha = \frac{1}{\sqrt{2\omega}}} \frac{\epsilon}{\omega} + \frac{1}{\sqrt{2\omega}} = \beta = 1$$

$$\alpha > \beta$$

$$\Rightarrow \alpha = -\frac{1}{\sqrt{2\omega}}, \beta = 1$$

مقادیر  $\rightarrow -\omega x^2 + \epsilon x + 1$      طول =  $-\frac{\epsilon}{-1} = \frac{\epsilon}{1}$  و عرض =  $\frac{9}{\omega}$

ناب اول

$$S = \alpha + \beta = \alpha^2 + \beta^2 - 12, \quad P = \alpha + \beta - 1 \quad \alpha^2 + \beta^2 = (\alpha + \beta)^2 - 2\alpha\beta$$

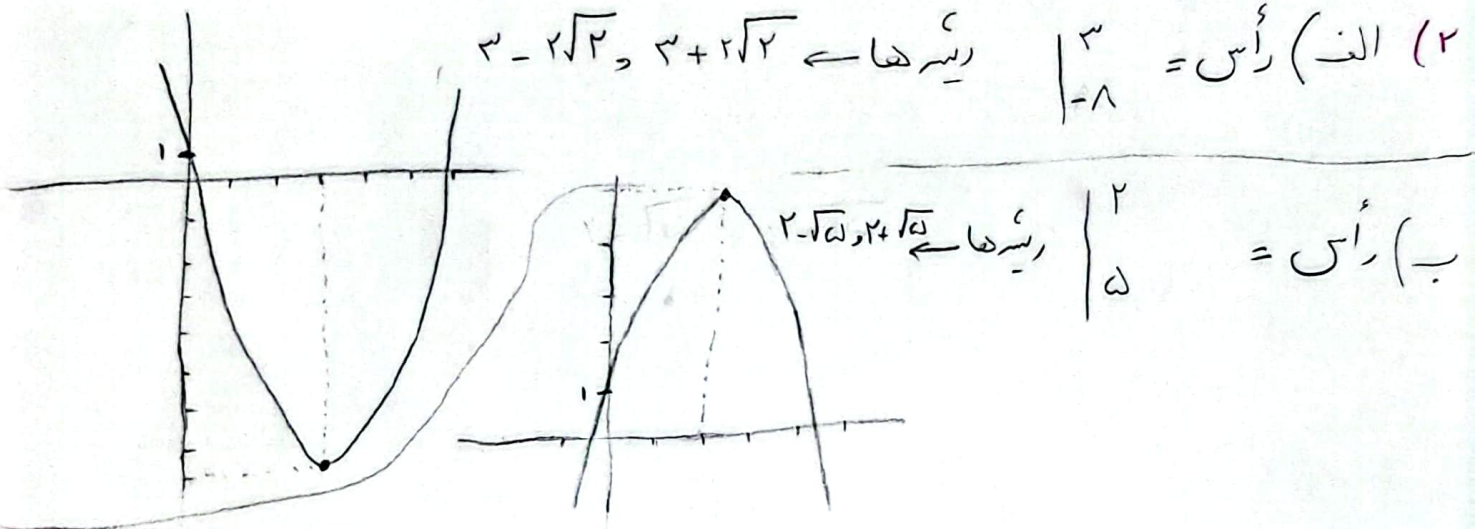
$$\alpha + \beta = (\alpha + \beta)^2 - 2(\alpha + \beta - 1) - 12 \xrightarrow{\beta + \alpha = S} S = S^2 - 2(S-1) - 12$$

$$S = S^2 - 2S + 2 - 12 \Rightarrow S^2 - 4S - 10 = 0 \quad S = \frac{4 \pm \sqrt{16 + 40}}{2} = \begin{cases} \omega \checkmark \\ -2 \times \end{cases}$$

پویان ریاضی

(۱) طول =  $-\frac{b}{2a} = -\frac{1}{2} = -\frac{1}{2}$  عرض =  $-\frac{\Delta}{4a} = -\frac{1-1}{4} = 0$  | محققاً نقطه و دورینه دارد و نقطای min دارد

(۲) طول =  $-\frac{b}{2a} = -\frac{3}{2} = -1.5$  عرض =  $-\frac{\Delta}{4a} = -\frac{9-9}{4} = 0$  | محققاً نقطه و ریشه ندارد و نقطای max دارد



(۳)

$\sqrt{\beta} - \sqrt{\alpha} = 1 \Rightarrow \alpha + \beta - \sqrt{2\alpha\beta} = 1$  }  $\Rightarrow 2m - \sqrt{2m} = 1$  (۴)  
 $\alpha + \beta = 2m$      $\alpha\beta = m$   
 $\sqrt{m} = t \Rightarrow 2t^2 - 2t - 1 = 0 \Rightarrow t = \frac{2 \pm \sqrt{4+8}}{4} = \frac{2 \pm 2\sqrt{3}}{4} = \frac{1 \pm \sqrt{3}}{2}$   
 $\Rightarrow$  فرصت ریشه‌ها =  $-\frac{1}{2}$

$\frac{m}{2} = \alpha\beta$  ,  $\frac{m+2}{2} = \beta + \alpha$     نقطای تقاطع =  $m$  (۵)  
 $(\alpha - \beta)^2 = (\alpha + \beta)^2 - 4\alpha\beta = \frac{(m+2)^2}{4} - 4 \cdot \frac{m}{2} = \frac{m^2 + 4m + 4}{4} - 2m = \frac{m^2 - 4m + 4}{4} = \frac{(m-2)^2}{4} = (\alpha - \beta)^2$   
 س. مثلث =  $\frac{1}{2} \times \frac{m-2}{2} \times m = \frac{1}{4} \Rightarrow m(m-2) = 1 \Rightarrow m^2 - 2m - 1 = 0$   
 $m \in \{1 + \sqrt{2}, 1 - \sqrt{2}\}$   $\Rightarrow$  ریشه‌ها  $\in \{\frac{1}{2}, \frac{1+\sqrt{3}}{2}, \frac{1-\sqrt{3}}{2}\}$