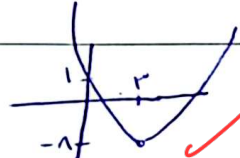


$y = 2a^2 - 4a + 1$ $y > 0 \rightarrow \min$ $\text{ent} \begin{vmatrix} 1 \\ -1 \end{vmatrix}$ ✓

$y = -2a^2 + 4a - 1$ $y < 0 \rightarrow \max$ $\text{ent} \begin{vmatrix} 2 \\ -4 \\ -1 \end{vmatrix}$ ✓

$y = a^2 - 4a + 1$ $\min \begin{vmatrix} 1 \\ -4 \end{vmatrix}$  ✓

$y = -a^2 + 4a + 1$ $\max \begin{vmatrix} 1 \\ 4 \end{vmatrix}$  ✓

$2a^2 + 4a^2 - 9a - 2 = 0$ $\alpha + \beta = 1$ $\alpha\beta = -2$ $\alpha^2 - 5a + 2 = 0$ $\alpha + \beta = 1$ $\alpha\beta = -2$ $\alpha = -1, \beta = 2$ $\alpha = 2, \beta = -1$ ✓

$\frac{1}{\alpha} = -1, \frac{1}{\beta} = 2$ $\frac{1}{\alpha} + \frac{1}{\beta} = -1 + 2 = 1$ ✓

$\sqrt{\alpha} - \sqrt{\beta} = 1$ $\alpha + \beta - 2\sqrt{\alpha\beta} = 1$ $5 - 2\sqrt{p} = 1$ $2\sqrt{m} = 4$ $\sqrt{m} = 2$ $m = 4$ $2m^2 - 4m - 1 = 0$ $m = 1$ $p = \frac{1}{2}$ ✓

$y = 2a^2 - (m+2)a + m$ $\alpha - \beta = \frac{\sqrt{\Delta}}{|a|} = \frac{\sqrt{m^2 - 4m + 4}}{2} = \frac{|m-2|}{2}$ $\frac{1}{\alpha} + \frac{1}{\beta} = \frac{m}{2} = 1$ $m = 2$ ✓

$y = m^2 - 2m + 1$ $m = \frac{b}{a} = \frac{-1}{1} = -1$ ✓

$$y = a \omega^t + k a + a \xrightarrow{a_1 = -\frac{r}{ka}} a \left(\frac{-r}{ka} \right)^t + k \left(\frac{-r}{ka} \right) + a = \frac{-a + k a^2}{ka} = \frac{v}{ka}$$

$$\Rightarrow \lambda a^t - v a - 1 = 0 \Rightarrow a = \frac{v + \sqrt{v^2 + 4}}{2} \quad \left\{ \begin{array}{l} a = 2 \checkmark \\ a = \frac{-11}{14} = -\frac{9}{14} \end{array} \right. \quad \text{غیر مثبت، } a > 0$$

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$$a^2 - (ka+1)a + a = 0 \quad \left\{ \begin{array}{l} a_1 = 1 \\ a_2 = k \end{array} \right. \quad m_1 a_1 = \frac{a}{1} = k \Rightarrow a = k$$

$$m^2 - (ka+1)m + b = 0 \Rightarrow m^2 - 10m + b = 0 \quad \left\{ \begin{array}{l} m_1 = 4 \\ m_2 = 6 \end{array} \right. \quad s = 10$$

$$P_2 - P_1 = 2k - 3 = 21 \quad \checkmark$$

$$y = -a \omega^t + a_1 + k \xrightarrow{\text{ent}} \left| \begin{array}{l} \frac{1}{k} \\ a+1 \end{array} \right. \quad m = \frac{1}{k} \quad y = \frac{-b}{k} = -\frac{1}{k}$$

$$\Rightarrow \frac{-b}{k} - 1 = \frac{r}{k} - k \Rightarrow \frac{r}{k} - k = -\frac{1}{k}$$

$$y = k b \omega^t - b n - 1 \xrightarrow{\text{ent}} \left| \begin{array}{l} \frac{1}{k} \\ -b-1 \end{array} \right. \quad m = \frac{1}{k} \quad y = \frac{a}{k} + r \quad \frac{a}{k} + r = \frac{b}{k} - \frac{b}{k} - 1 \Rightarrow a = -1$$

$$b - a = -4 - (-1) = 5 \quad \checkmark$$

$$\alpha, \beta \in \mathbb{R}, \rho > \alpha \quad y = k \omega \alpha^t + k n + \beta \xrightarrow{\alpha \rightarrow \beta = -\frac{r}{k \omega \alpha}}$$

$$\alpha = \frac{1}{\omega} \rightarrow \beta = -1 \quad \alpha = -\frac{1}{\omega} \rightarrow \beta = 1 \checkmark$$

$$y = -\omega \times \frac{r}{k \omega} + \frac{1}{\omega} + 1 = \frac{9}{\omega}$$

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$$y = m^2 - (a^2 + b^2 - 12)a + a + b - 1 = 0$$

$$\left\{ \begin{array}{l} a + b = a^2 + b^2 - 12 = 5 \\ ab = a + b - 1 = 5 - 1 = a^2 + b^2 - 12 = 4 \end{array} \right.$$

$$s = 5 - 2p - 12 \Rightarrow s = 5 - 2s + 12 - 12 \Rightarrow s^2 - 3s - 10 = 0$$

$$(s-5)(s+2) = 0 \Rightarrow s = 5 \checkmark \quad \text{یا } s = -2$$