

$$\Delta = 9 - 4a^2 \rightarrow \frac{-\Delta}{4a} = \frac{1}{\lambda} \rightarrow -\frac{9-4a^2}{4a} = \frac{1}{\lambda} \rightarrow \lambda a^2 - 4a - 1 = 0$$

$$\rightarrow \Delta = 9 + 4\omega^2 = 4\omega^2 \rightarrow \omega = \frac{\sqrt{4\omega^2}}{2} \rightarrow a = \frac{\sqrt{4\omega^2}}{2} \rightarrow \begin{cases} a = \omega \\ a = -\omega \end{cases}$$

$$\rightarrow a > 0 \rightarrow a = \omega \quad \text{بالتالي} \quad \text{2}$$

$$1) \quad x^2 - (a+1)x + a = 0 \quad \begin{matrix} \nearrow n \\ \searrow n+1 \end{matrix} \rightarrow \delta = n + (n+1) = 2n+1, \quad \frac{-b}{a} = a+1 \rightarrow 2n+1 = a+1$$

$$\rightarrow a = 2n+1 \quad / \quad P = n^2 + 2n, \quad a \rightarrow a = n^2 + 2n$$

$$\rightarrow 2n+1 = n^2 + 2n \rightarrow (n-1)(n+1) = 0 \rightarrow n=1 \rightarrow n \in \mathbb{N} \rightarrow a = 2(1)+1 = 3$$

$$\text{بالتالي } 1 \text{ و } 3 \rightarrow P = 3 \quad / \quad x^2 - (3a+1)x + b = 0 \rightarrow 3a+1 = 1 \rightarrow x^2 - 10x + b = 0$$

$$\rightarrow \delta = 10 \Rightarrow 2k + (2k+2) = 4k+2 = 10 \rightarrow k=2 \rightarrow \text{بالتالي } 4, 4 \rightarrow \underline{4 \times 4 = 16} \quad P(1) = 3 \quad \text{و } P(2) = 4 \quad \text{بالتالي } 2 \quad \text{2}$$

$$y_1 = -ax^2 + ax + 2 \rightarrow x_{S_1} = \frac{1}{2} \rightarrow y_2 = 2bx^2 - bx - 1 \rightarrow x_{S_2} = \frac{1}{2}$$

$$\rightarrow \frac{b}{4} - \frac{b}{4} - 1 = -1 \rightarrow y_1 = y_2 \rightarrow \frac{a}{2} + 2 = -1 \rightarrow a = -12$$

$$y_2 = y_1 \Rightarrow \frac{b}{4} - 1 = \frac{2(-12)}{4} + 2 \rightarrow b = -4 \rightarrow b - a = -4 + 12 = 8$$

$$y = 2\omega x^2 + 4x + 3 \rightarrow y = px^2 + qx + r \quad p = 2\omega, \quad q = 4$$

$$x_S = \frac{-q}{2p} \Rightarrow y_S = r - \frac{q^2}{4p}$$

$$\rightarrow x_S = \frac{-4}{2 \times 2\omega} = \frac{-2}{2\omega} \rightarrow a > 0 \Rightarrow x_S < 0 \Rightarrow \text{بالتالي } 115$$

$$y_S = 3 - \frac{16}{4\omega} = 3 - \frac{4}{\omega} \rightarrow \beta > \alpha \rightarrow y_S = 3 - \frac{4}{\omega} > 0$$

$$a + b = \frac{a^2 + b^2}{\delta} - 1 \quad p = \frac{a+b}{\delta} - 1$$

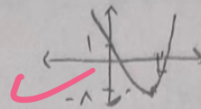
$$\delta = \delta^2 - 2(\delta-1) + 1 \rightarrow \delta^2 - 2\delta + 2 = 1 \rightarrow \delta^2 - 2\delta + 1 = 0 \rightarrow (\delta-1)(\delta+1) = 0$$

$$a+b > 0 \rightarrow \underline{a+b = 0} \quad \text{2}$$

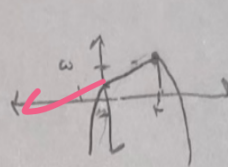
الف) $y = 2x^2 - 4x + 1$ $a > 0 \rightarrow \min$ $\left| \frac{f}{f} = 1 \right.$

ب) $y = -2x^2 + 4x - 5$ $a < 0 \rightarrow \max$ $\left| \frac{f}{f} = 1 \right.$

الف) $x^2 - 4x + 1$ $\min \left| \frac{f}{f} = 3 \right.$



ب) $-x^2 + 4x + 1$ $\max \left| \frac{f}{f} = 2 \right.$



$fx^2 + kx^2 - 9x - 2 = 0$ $\alpha + \beta = 1$ $\alpha\beta = -2$

$(f+k)x^2 - 9x - 2 = 0 \rightarrow \delta = \frac{-b}{a} = \frac{9}{f+k} \rightarrow k = 6$ $\rho = \frac{-2}{f+k} = -\frac{2}{6}$
 $\rightarrow \frac{-2}{f} \neq 2 \xrightarrow{x=1} f+k-9-2=0 \rightarrow k=6$

$x^2 - 3mx + m \rightarrow \Delta = 9m^2 - 4m \rightarrow \frac{\sqrt{\Delta}}{a} \Rightarrow \sqrt{9m^2 - 4m} = 1 \rightarrow 9m^2 - 4m - 1 = 0$

$m = \frac{f \pm \sqrt{f^2 - 4m}}{18} = \frac{2 \pm \sqrt{13}}{9}$ $\rho = \frac{-m}{f}$

$\rightarrow \frac{1}{9} \times \frac{2 + \sqrt{13}}{9} \Rightarrow -\frac{2 \pm \sqrt{13}}{18}$

$\delta = \frac{m+2}{f}$ $\rho = \frac{m}{f} \rightarrow |\alpha_1 - \alpha_2| = \sqrt{(\alpha_1 + \alpha_2)^2 - 4\alpha_1\alpha_2}$

$\rightarrow \sqrt{\left(\frac{m+2}{f}\right)^2 - 4\left(\frac{m}{f}\right)} = \frac{|m-2|}{f} \rightarrow \delta = \frac{1}{f} \times \frac{|m-2|}{f} \times |m| = \frac{2}{f}$

① $m(m-2) = 3 \rightarrow m=3$
 ② $m(m-2) = -3 \rightarrow m=-1$
 $\Rightarrow y = x^2 - mx + 1 \rightarrow x_\delta = \frac{m}{f}$

$$\alpha + \beta = 1 \rightarrow n^r - 5n + p \rightarrow n^r - n - r \sim (n-r)(n+1) = .$$

۱۲

$$n=r \rightarrow r(r)^r + k - n - r = . \rightarrow \boxed{k = -r}$$

$$\sqrt{\alpha} - \sqrt{\beta} = 1 \xrightarrow{\text{توان ۲}} \alpha + \beta - 2\sqrt{\alpha\beta} = 1 \rightarrow r_m - 2\sqrt{m} = 1 \quad (r_m = t)$$

۱۳

$$r_m^r - 2t - 1 = . \rightarrow t = 1 \quad \sqrt{m} = . \rightarrow m = 1$$

$$\hookrightarrow t = \frac{-1}{r}$$

$$r_n^r - mn - m = . \rightarrow r_n^r - n - 1 = . \rightarrow \frac{c}{a} = \frac{-1}{r}$$

$$\frac{c}{a} = \frac{\beta}{r\alpha} = \alpha\beta \rightarrow \alpha^r = \frac{1}{r\alpha} \rightarrow \alpha = \pm \frac{1}{a}$$

۹

$$-\frac{b}{a} = \frac{-r}{r\alpha} = \alpha + \beta \rightarrow \alpha = \frac{1}{a} \rightarrow \beta = -1$$

$$\hookrightarrow \alpha = -\frac{1}{a} \rightarrow \beta = 1 \quad \checkmark (\beta > \alpha)$$

$$y = -2n^r + kn + 1 \rightarrow \begin{cases} x_5 = \frac{r}{1} \text{ مثبت} \\ y_8 = \frac{-\Delta}{2a} = \frac{-(14+20)}{-2} = \frac{9}{1} \text{ مثبت} \end{cases}$$

★ راس سهمی از نیمه اول است