

۱۳۷۵

(۱)

$$\alpha^2 - \omega\alpha + \gamma = 0$$

$$\frac{\alpha + \beta^2}{\omega\beta^2}$$

$$\alpha^2(\alpha + \beta) + \alpha\beta = 0$$

$$\alpha + \beta = \omega$$

$$\alpha\beta = \gamma$$

$$\beta^2 - \omega\beta + \gamma = 0 \rightarrow \beta^2 = \omega\beta - \gamma$$

$$\rightarrow \beta^3 - \beta \times \beta^2 = \beta(\omega\beta - \gamma) = \omega\beta^2 - \gamma\beta$$

$$\omega(\alpha\beta - \gamma) - \gamma\beta = \gamma\omega\beta - 10 - \gamma\beta = \gamma^2\beta - 10$$

$$\beta^4 - \beta \times \beta^3 = \beta(\gamma^2\beta - 10) = \gamma^2\beta^2 - 10\beta$$

$$10\alpha\beta - 4\gamma, \beta^5 = \beta \times \beta^4 = \beta(\gamma^2\beta^2 - 10\beta) = \gamma^2\beta^3 - 10\beta^2 = \gamma^2(\omega\beta - \gamma) - 10\beta^2 = 11\omega\beta - 4\gamma - 10\beta^2$$

$$-110 - 44\beta = 47\alpha\beta - 210$$

$$\alpha + \beta^2 = \gamma \Rightarrow \gamma(\omega - \beta) = 20 - 4\beta \rightarrow \alpha + \beta^2 = 20 - 4\beta + 47\alpha\beta - 210 = -190 + 47\alpha\beta$$

$$\alpha\beta^2 = \alpha(\omega\beta - \gamma) = \gamma\omega\beta - 10$$

$$\Rightarrow \frac{47\alpha\beta - 190}{\gamma\omega\beta - 10} = \frac{\gamma(\omega\beta - \gamma)}{\gamma(\omega\beta - \gamma)} \Rightarrow \frac{47\alpha\beta}{\omega\beta} = 19$$

$$19\gamma(\omega\beta - \gamma) = 47\alpha\beta - 210$$

$$\frac{47\alpha\beta - 210}{\omega\beta - \gamma} = 19 \rightarrow \text{جواب}$$

✓

(۲)

$$1) 9a + 3b + c = -4$$

$$2) \frac{1}{2}a - \frac{1}{3}b + c = -4$$

از طرف دیگر

$$a(1 - \frac{1}{2a}) + b(3 + \frac{1}{3}) = 0 \Rightarrow \frac{22}{3}a + \frac{10}{3}b = 0$$

$$\xrightarrow{\times 3} 22a + 10b = 0 \Rightarrow 11a + 5b = 0 \Rightarrow b = -\frac{11}{5}a$$

$$-\frac{b}{a} = -\frac{-\frac{11}{5}a}{a} = \frac{11}{5} = 2.2 \Rightarrow \text{نسبت منهای تاج = ریشه های معادله درجه ۲}$$

پاسین صفحه بعدی

جواب

(۳)

$$\alpha + \beta = -2k, \alpha\beta = \omega$$

$$|\alpha - \beta| = \sqrt{(\alpha + \beta)^2 - 4\alpha\beta} = \sqrt{(-2k)^2 - 4\omega} = \sqrt{4k^2 - 4\omega} = 2\sqrt{k^2 - \omega}$$

$$2\sqrt{k^2 - \omega} = \frac{4}{k}k \xrightarrow{\div 2} \sqrt{k^2 - \omega} = \frac{2}{k}k \xrightarrow{\text{مربع کردن}} k^2 - \omega = \frac{4}{k^2}k^2 \rightarrow k^2 - \frac{4}{k^2}k^2 = 0$$

$$\frac{\omega}{k^2}k^2 = \omega \rightarrow k^2 = 4 \rightarrow k = 2 \text{ (ریشه های مثبت و منفی)}$$

$$\Rightarrow \left[\frac{3}{2} \right] = \left[\frac{1}{2} \right] = \left[\frac{4}{\omega} \right] = \left[\frac{4}{\omega} \right]$$

جواب

✓



$A = (3, 4)$
 $B = (-4, 4)$

$$9 - 4h + h^2 = 20 + 10h + h^2 \Rightarrow -14 = 14h \rightarrow \boxed{h = -1}$$

$$\alpha^r + \beta^r = \omega \Rightarrow (-1-s)^r + (-1+s)^r = \omega \rightarrow s = \sqrt{\frac{-1}{a}} \rightarrow (1+rs + s^r) + (1-rs + s^r) = \omega$$

$1 + 2s^2 = 0 \rightarrow s^2 = -\frac{1}{2} \rightarrow -\frac{1}{2} = \frac{\pi}{2} \rightarrow \alpha = -\frac{\pi}{2}$
 $\Rightarrow n=0 \quad y = a(0+1)^2 + 1 = -\frac{1}{2} + 1 = \frac{1}{2}$
 النقطة $(0, \frac{1}{2})$

①

$$a(\infty) \Rightarrow n_1 \rightarrow \frac{\omega + \sqrt{\omega^2 + \epsilon m}}{\epsilon} < \frac{q}{\epsilon} = \sqrt{\omega^2 + \epsilon m} < \epsilon \Rightarrow \epsilon m < -q \Rightarrow$$

مقدار m $\Rightarrow -2.25 < m < -4.25$ ، مقادیر صحیح بین این دو : $-3, -4, -5, -6$ پس مقدار صحیح m 4.

(4) از به مقدار یعنی $n_{\min} = \frac{12}{2m} = \frac{4}{m} \approx \min$

$$y_{min} = m \left(\frac{y}{m} \right)^2 - 1 \times \left(\frac{y}{m} \right) + \omega m - 1 \rightarrow y_{min} = m \times \frac{y^2}{m^2} - \frac{y}{m} + \omega m - 1 = \frac{y^2}{m} + \omega m - 1 \quad \leftarrow \text{min}$$

$$-\frac{r_4}{m} + am - 1 = r \rightarrow am^2 - rm - r_4 = 0, \Delta = a + 4r_4 = 4r_4 \Rightarrow m_2 = \frac{1 \pm \sqrt{10}}{10} \rightarrow m_r = \frac{-1 \pm \sqrt{10}}{10}$$

$\Rightarrow \lambda = \frac{y}{x} \rightarrow \begin{matrix} \text{المخرج} \\ \text{المقام} \end{matrix} \quad m = 2 \rightarrow \text{مخرج} = \boxed{2} \checkmark$
 $\rightarrow \begin{matrix} \text{المخرج} \\ \text{المقام} \end{matrix} \quad m = -\frac{12}{5} \rightarrow \text{مخرج} = -12$

⑤ ترتیب مراد که شرط همبستگی از معادله ی جبردار برقرار کنند باید حقیقی باشد و بالین این ترتیب مقدار $a = -\frac{1}{2}$ می باشد

$$\frac{\alpha}{\alpha} = \frac{\beta}{\alpha} \Rightarrow \alpha' = \alpha\beta \rightarrow \alpha + \beta = -2(\alpha + 1)$$

جانب (ا) $\alpha + \frac{\alpha^2}{a} = -r(a+1) \Rightarrow \alpha\alpha + \alpha^2 = -r a(a+1) \Rightarrow \alpha^2 + \alpha\alpha + r a(a+1) = 0$

$$\alpha \times \frac{\alpha^r}{a} = (\alpha-1) \Rightarrow \frac{\alpha^r}{a} = (\alpha-1), \quad \alpha^r = a\beta \Rightarrow a\beta = (\alpha-1) \Rightarrow \beta = \frac{\alpha^r}{a}$$

$$x^2 - 7x - 5 = 0 \rightarrow x^2 = t \rightarrow t^2 - 7t - 5 = 0 \quad \begin{matrix} s = 7 \\ p = -5 \end{matrix}$$

①

$$\Rightarrow 1p^2 - 7sp + 2s \Rightarrow \underbrace{1 \times (-5)^2}_{50} - \underbrace{7 \times (7) \times (-5)}_{105} + \underbrace{2 \times (-5)}_{-10} = 145$$

پایین صفه بخون:

$$x = \frac{-b}{2a} \quad y = \frac{-\Delta}{4a}$$

پایین صفه بخون:

$$c = -9, b = -4, a = k \quad \text{⑨}$$

$$x = \frac{4}{2k} = \frac{2}{k}; y = k\left(\frac{2}{k}\right)^2 - 4\left(\frac{2}{k}\right) - 9 = -\frac{4}{k} - 4 \Rightarrow -\frac{4}{k} - 4 = -4\left(\frac{2}{k}\right) - 4$$

$$-\frac{4}{k} - 4 = -\frac{4}{k} - 4 \Rightarrow \frac{(-4+1)}{k} = 2 \rightarrow 4 = 2k \rightarrow k = 2 \Rightarrow \text{عرفن راس}$$

(1, 75)

عرفن راس سی

$$y = -1$$

⑩

$$-mx^2 + mx + 1 = -m - x \quad \text{بیکس$$

$$\xrightarrow{x-1} mx^2 - (m+1)x - (1+m) = 0 \quad \Delta = (-1(m+1))^2 - 4(m)(-(1+m)) = (m+1)^2 + 4m$$

$$x(m+1) = (m+1)((m+1) + 4m) \Rightarrow (m+1)(5m+1) \Rightarrow (m+1)(5m+1) = 0 \rightarrow m = -1 \rightarrow m = -\frac{1}{5}$$

$$m = 0 \Rightarrow -1(m(-\frac{1}{5})) \Rightarrow \text{عدد m که ملحق می شود}$$

⑪ ✓

$$\begin{matrix} A & (3, -4) \\ B & (-1, 5, -4) \end{matrix} \left\{ \begin{matrix} \text{عرض بین} \end{matrix} \right.$$

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$$\frac{n_A + n_B}{\gamma} = n_S = -\frac{b}{\gamma a}$$

$$-\frac{b}{a} = n_A + n_B \rightarrow 3 - (1, 5) = 1, 5$$

$$P = \alpha B = \gamma a - 1$$

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$$a^r = \alpha \cdot B \rightarrow a^r = \gamma a - 1 \Rightarrow (a - 1)^r = 0 \rightarrow a = 1$$

$$\xrightarrow{a=1} n^r + 4n + 1 = 0 \rightarrow \Delta > 0 \quad \checkmark \quad \text{شرط وجود درستی:}$$

$$n^r - \gamma n^r - \omega = 0$$

$$n' + n'' = S$$

$$n' n'' = P$$

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$$n^r = t$$

$$t^r - \gamma t - \omega = 0$$

$$t = \frac{\gamma \pm \sqrt{49}}{\gamma}$$

$$\rightarrow n^r = \frac{\gamma + \sqrt{49}}{\gamma} \rightarrow n = \pm \sqrt{\frac{\gamma + \sqrt{49}}{\gamma}}$$

$$\rightarrow S = 0, P = -\frac{\gamma + \sqrt{49}}{\gamma}$$

$$\gamma P^r - \gamma S P + \gamma S = 0 \quad \gamma \left(-\frac{\gamma + \sqrt{49}}{\gamma} \right)^r = \Delta 9 + \gamma \sqrt{49}$$

$$S(x_1, y_1) \rightarrow y_1 = -f(x_1) - f$$

9

$$y_1 + f x_1 = -f \quad \underline{I}$$

$$\text{راس می} = x_1 = \frac{-b}{\frac{f}{2a}} = \frac{f}{\frac{f}{2k}} = \frac{2}{k} \quad \underline{II}$$

$$y_1 = k(x_1)^2 - f(x_1) - 4 \xrightarrow{I} -f = k(x_1)^2 - 4$$

$$\underline{II} \rightarrow 2 = k \left(\frac{2}{k} \right)^2 \rightarrow k = 2$$

$$\begin{cases} x_1 = 1 \\ y_1 = -8 \end{cases} \rightarrow \text{عرض راس می}$$