

11/3

۱۵۲۵

برای یافتن

سوال (۱)

$$y = (a-1)x^2 + x + 3$$

$$x = \frac{-b}{2a} = \frac{-1}{2(a-1)}$$

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$$\Rightarrow \frac{-1}{2(a-1)} = 2 \Rightarrow -1 = 4(a-1) \Rightarrow -1 = 4a - 4$$

$$\Rightarrow a = \frac{3}{4}$$

جایگذاری
در معادله

$$\left(\frac{3}{4} - 1\right)x^2 + x + 3$$

برای یافتن
حل بخورده معادله با جبره و قدری

$$\frac{-1}{4}x^2 + x + 3 = 0 \Rightarrow x^2 - 4x - 12 = 0$$

برای ضرب کردن

$$\Rightarrow (x-6)(x+2) = 0 \quad \begin{cases} x = 6 \checkmark \leftarrow \text{حل} + \\ x = -2 \leftarrow \text{حل} - \end{cases}$$



ISATIS SOOME INNOVATION

سوال (۲)

λ	λ_1	λ_2
$f(\lambda)$	$-$	$+$

$f(\lambda) = m\lambda^2 - d\lambda + m$

①. بررسی کنیم که آیا λ_1, λ_2 ریشه حقیقی است یا نه.

دستور کار: $m < 0$ است

$\Delta = d^2 - 4(m)(m) > 0 \Rightarrow d^2 - 4m^2 > 0$

$\Rightarrow 4m^2 < d^2 \Rightarrow 2m < d \Rightarrow \frac{-d}{2} < m < \frac{d}{2}$

این شرط

$\left\{ \begin{array}{l} m < 0 \\ -\frac{d}{2} < m < \frac{d}{2} \end{array} \right. \xrightarrow{\Delta} \left(-\frac{d}{2}, 0 \right)$

سوال (۳) ۰/۵

معادله: $x^2 - 8x + p$

$\lambda_1 = \frac{8 - \sqrt{d}}{2}$

$\lambda_2 = \frac{8 + \sqrt{d}}{2}$

$S = \lambda_1 + \lambda_2 = \frac{8 - \sqrt{d}}{2} + \frac{8 + \sqrt{d}}{2} = 8$

$P = \lambda_1 \cdot \lambda_2 = \left(\frac{8 - \sqrt{d}}{2} \right) \left(\frac{8 + \sqrt{d}}{2} \right)$

$\frac{9}{k} - \frac{d^2}{k^2} = \frac{-1}{k} \Rightarrow \frac{k}{9}$



حاصل: $x^2 - 8x - \frac{1}{k}$

درج

$4x^2 - 18x + 5$

$$r^2 - 12r + m + 1 = 0 \rightarrow \text{مميز} \Rightarrow \alpha, \beta \quad (\text{سؤال 4})$$

$$r\alpha + \beta = 12 \quad m = ?$$

$$\alpha + \beta = 12$$

$$\beta = 12 - \alpha$$

$$\left\{ \begin{aligned} S &= \frac{-b}{a} = \frac{1}{r} = 12 \\ P &= \frac{c}{a} = \frac{m+1}{r} \end{aligned} \right.$$

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دقيق $\rightarrow 12\alpha + (12 - \alpha) - 12 = 0 \Rightarrow 11\alpha - 12 + 12 = 0$

$$\Rightarrow (11\alpha - 12) = 0 \Rightarrow \alpha = 1 \Rightarrow \beta = 12 - 1 = 11$$

$$\left\{ \begin{aligned} P &= \frac{m+1}{r} = 11 \Rightarrow m+1 = 12 \\ P &= 11 \times 2 = 22 = 12 \end{aligned} \right. \quad \alpha < \beta \checkmark \quad m = 11$$

$$S(1, 9) \quad y = ax^2 + bx + c \quad \underline{y = a(x-h)^2 + k} \quad (\text{سؤال 5})$$

$$c = 5$$

$$y = a(x-2)^2 + 9 \Rightarrow (0, 5) \quad 5 = a(0-2)^2 + 9$$

$$\Rightarrow 5 = 4a + 9 \Rightarrow 4a = -4 \quad a = -1$$

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$$\Rightarrow y = -(x-2)^2 + 9 \quad \xrightarrow{\text{نقطة كل دائرة}} \quad -(2-2)^2 + 9 = 0$$

$$x - 2 = \pm 3$$

$$\begin{cases} x = 5 \\ x = -1 \end{cases}$$

$$(-1, 0), (5, 0)$$

$$\Rightarrow (-1, 5)$$

$$a = -1 \quad \text{دائرة محسوسة}$$

جواب

$$\alpha x^2 - Vx + 9B = 0 \quad \alpha x^2 + bx + c = 0 \quad \alpha + \beta = \frac{-b}{a} \quad (\text{سؤال ٤})$$

$$\alpha + \beta = \frac{V}{\alpha}, \quad \alpha\beta = \frac{c}{a} \Rightarrow \frac{9\beta}{\alpha} = \cancel{\alpha}\beta = \frac{9}{\alpha} \quad \text{٥} \quad \beta < 0$$

$$\Rightarrow \alpha^2 = 9 \Rightarrow \alpha = \pm 3 \quad \left\{ \begin{array}{l} \alpha = 3 \Rightarrow 3 + \beta = \frac{V}{3} \quad \beta = \frac{-2}{3} \\ \alpha = -3 \Rightarrow -3 + \beta = \frac{-V}{3} \quad \beta = \frac{1}{3} \checkmark \end{array} \right.$$

$$\frac{1}{\alpha} + \frac{1}{\beta} = \frac{-1}{3} + \frac{1}{3} = \frac{V}{4} \quad \rightarrow \quad \text{جواب}$$

$$x^2 + mx - km = 0$$

$$x^2 - m\beta = \Lambda$$

$$f = ? \quad \frac{-b}{a} = \frac{-m}{1} = p$$

$$x^2 + mx - km = 0$$

$$x^2 = +km - m\alpha$$

$$km - m\alpha - m\beta = \Lambda$$

(سوال ۷)

$$(km - m\alpha) - m\beta = \Lambda$$

$$km - m(\alpha + \beta) = \Lambda$$

$$\alpha + \beta = -m$$

$$\Rightarrow km - m(-m) = \Lambda \quad m^2 + km - \Lambda = 0$$

$$(m + k)(m - k) = \begin{cases} m_1 = -k & D < 0 \\ m_2 = k & D > 0 \end{cases}$$

$$f = \begin{cases} m = -k \Rightarrow S = \text{X} \\ m_2 = k \Rightarrow f = \checkmark \end{cases}$$



$$f(z) = mz^r + rz + \frac{m}{r} + v \quad k = ? \quad (1 \text{ سؤال})$$

$$r_s = 1 \Rightarrow \frac{-b}{ra} = 1 \Rightarrow \frac{-r}{rm} = 1 \Rightarrow -r = 14m \quad \frac{-D}{ra} = 1$$

$$\Rightarrow m = \frac{-\varepsilon}{14} = \left[\frac{-1}{\varepsilon} \right] \quad \frac{-1}{r} z^r + rz + \frac{14}{1}$$

$$m = \frac{41 - r}{x}$$

$$f(n) = -r_n r + r_n + 4$$

$$y = az^r + bz + c \Rightarrow S(r, y) \Rightarrow ra + rb + r = y \quad (1 \text{ سؤال})$$

$$ra + b = +1 \quad / \quad r_s = \frac{-b}{ra} = r \Rightarrow -b = ra \Rightarrow b = -\varepsilon a$$

$$\hookrightarrow ra - ra = +1 \Rightarrow -ra = 1 \Rightarrow a = \left[\frac{-1}{r} \right]$$

$$b = -\varepsilon \times \frac{-1}{r} = \left[\frac{+1}{r} \right] \quad / \quad y = \frac{-1}{r} z^r + rz + r$$

$$\Rightarrow \Delta = \varepsilon - \varepsilon \left(\frac{-1}{r} \right) (\varepsilon) = 12$$

$$\begin{aligned} z_1 &= \frac{-r + \sqrt{12}}{-1} \Rightarrow r - \sqrt{12} \\ z_2 &= \frac{-r - \sqrt{12}}{-1} \Rightarrow r + \sqrt{12} \end{aligned} \quad \begin{aligned} &\text{كبح مقلوب} \\ &\left[\frac{-1}{r} \right] \end{aligned}$$

$$z^r - (ra + r)z + (ra^r + 4a + r) = 0$$

(1. سؤال)

$$\left(x=r \right) \quad r - \underbrace{r(ra + r)}_{-1a - 1} + ra^r + 4a + r$$

$$\Rightarrow ra^r - ra - 1 = 0 \Rightarrow a^r - ra - r = 0$$

$$(a - r)(a + 1) = 0 \quad \left\{ \begin{aligned} a &= 1 \\ a &= -\frac{1}{r} \end{aligned} \right. \quad / \quad x^r - 12z + 12 = 0$$

$$a = \frac{1}{r} \rightarrow x \quad \left\{ \begin{aligned} r \\ r \\ r \end{aligned} \right.$$

$$\Rightarrow (r - r)(r - r) = 0 \quad \left\{ \begin{aligned} x &= r \\ r &= r \end{aligned} \right. \quad \leftarrow \text{ط}$$