

هستی نصیری نژاد

سوال ۱

$$\begin{aligned} \begin{cases} 9 = a - b + c \\ 1 = 9a + 3b + c \end{cases} & \quad -\frac{b}{3a} = -1 \rightarrow -b = 3a \rightarrow b = -3a \\ x = 1 \rightarrow 9 = a - 3a + c & \quad \rightarrow -1 = 4a \rightarrow a = -\frac{1}{4} \rightarrow b = \frac{3}{4} \\ 1 = 9a + 3b + c & \quad \rightarrow \frac{3}{4}b = -1 \end{aligned}$$

مغادله: $-\frac{1}{4}x^2 - x + \frac{17}{4}$ $-a + c = 9 \rightarrow c = a - 9 \rightarrow c = -\frac{1}{4} - 9 \rightarrow c = -\frac{37}{4}$

سوال ۲

$\Delta > 0$, $S > 0$, $P > 0$

$S = -\frac{b}{a} \Rightarrow -\frac{m}{2} > 0 \rightarrow m < 0$ $P = \frac{c}{a} \Rightarrow \frac{m+4}{2} > 0 \rightarrow m > -4$

$\Delta = b^2 - 4ac \rightarrow m^2 - (4 \times 2(m+4)) \Rightarrow m^2 - 8m - 32 > 0$

$\rightarrow (m-12)(m+4) > 0$

$m > 12$! $m < -4$

۳ - به درستی خود و نقطه ۴ قابل انتخاب

$((12, +\infty) \cup (-\infty, -4)) \cap (-\infty, 0) \cap (-4, +\infty) \rightarrow (-4, -2)$



Subject :

Year :

Month :

Date :

$$\alpha + \beta = \frac{1}{2\beta} \quad \alpha + \beta = -\frac{b}{a} = \frac{1-2m}{3} \quad \left[\frac{\sqrt{V}}{2} \right] \text{سوال 3}$$

$$\alpha \times \beta = \frac{c}{a} = \frac{2-m}{3} \quad 3\alpha^2 + (2m-1)\alpha + 2-m=0$$

$$\frac{1-2m}{3} = \frac{3}{2-m} \rightarrow (2-m)(1-2m) = 9 \rightarrow 2m^2 - 5m + 2 = 9 \rightarrow 2m^2 - 5m - 7 = 0$$

$$m = \frac{+5 \pm \sqrt{25 - 4(2)(-7)}}{2} \rightarrow \left[\frac{\sqrt{V}}{2} \right] \xrightarrow{\text{بایدای}} 3y + 4x > 0 \rightarrow \text{قابل قبول} \checkmark$$

-1 $\rightarrow 1 - 12 = -11 < 0$ غیر قابل قبول
چون Δ منفی است

$$x^2 - x - 4 = 0 \rightarrow S = 1, P = -4$$

$$\alpha + \beta = (\alpha_1 + \alpha_2)^3 - 3\alpha_1\alpha_2(\alpha_1 + \alpha_2) + \frac{\alpha_1 + \alpha_2}{\alpha_1\alpha_2} = 1 + 12 - \frac{1}{-4} = \frac{51}{4} \quad \text{سوال 4}$$

$$\alpha \times \beta = (\alpha_1\alpha_2)^3 + (\alpha_1 + \alpha_2)^3 - 3\alpha_1\alpha_2 + \frac{1}{\alpha_1\alpha_2} = -4 + 1 + 1 - \frac{1}{4} = -\frac{221}{4}$$

$$x^2 - \frac{51}{4}x - \frac{221}{4} = 0 \rightarrow 4x^2 - 51x - 221 = 0 \rightarrow 4x^2 - 51x - 221 = 0$$

$$\left(\sqrt[3]{x^2} + \frac{1}{\sqrt[3]{x^2}} + 1 \right) \left(\sqrt[3]{x^2} - 1 \right) = 2\sqrt[3]{x} \quad \text{سوال 5}$$

$$\left(\frac{\sqrt[3]{x^4} + 1 + \sqrt[3]{x^2}}{\sqrt[3]{x^2}} \right) \left(\sqrt[3]{x^2} - 1 \right) = 2\sqrt[3]{x} \rightarrow x^2 - 1 = 2x \rightarrow x^2 - 2x - 1 = 0$$

$$\alpha_1 + \alpha_2 = -\frac{b}{a} \rightarrow \left[2 \right]$$

$$a = 3B \rightarrow 3B^2 = \frac{4}{3} \rightarrow B^2 = \frac{4}{9} \quad \left\{ \begin{array}{l} B = \frac{2}{3} \rightarrow a = 2 \rightarrow a+B = \frac{1}{3} \\ B = -\frac{2}{3} \rightarrow a = -2 \rightarrow a+B = -\frac{1}{3} \end{array} \right. \quad \text{سوال 6}$$

$$a+B = \frac{9}{3} \rightarrow a = 3(a+B) = \pm 1 \rightarrow |a_1 - a_2| = 14 \rightarrow \boxed{14}$$



Subject :

Year :

Month :

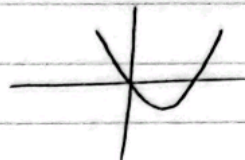
Date :

سوال ۷ به انای جمع مقدار.

$$y = x(ax + (r + pa)) = 0 \rightarrow ax + (r + pa) = 0 \rightarrow x = -\frac{r + pa}{a}$$

$a > 0$

$$y = -x \rightarrow a = 0 \text{ یا } 1 \rightarrow r + a \rightarrow -\frac{b}{a} > 0$$



$$\frac{-r}{a} > 0$$

سوال ۸

$$y = x^2 + ax - r, y = -x^2 - 2a + b$$

تقاطع

$$\rightarrow \frac{-b}{ra} = \frac{-a}{r} \rightarrow x_r = \frac{-(-r)}{r(-1)} = \frac{r}{-r} = -1$$

$$\frac{-a}{r} = -1 \rightarrow a = r$$

$$x^2 + rx - r = 1 \rightarrow x^2 + rx - r - 1 = 0 \rightarrow (x + r)(x - 1) = 0$$

$x = 1$
 $x = -r$

$$-x^2 - 2a + b$$

$x = 1 \rightarrow y = -1 - r + b = b - r$
 $x = -r \rightarrow y = -r^2 + r + b \rightarrow b - r$

$b - r = 1 \rightarrow b = r + 1$
 $a \times b = 1$

سوال ۹

$$rx^2 - 9x + b = 0 \quad rx^2 + ax - 4 = 0$$

x_1, x_2 y_1, y_2

$$s = \frac{a}{r} \quad s = \frac{-a}{ra} = -\frac{1}{r} \quad \frac{a}{r} = -\frac{1}{r} + 1 \rightarrow a = 1$$

$p = \frac{b}{r} \quad p = \frac{-r}{a}$

$$x_1 + x_2 = (y_1 + \frac{1}{r})(y_2 + \frac{1}{r})$$

$$\rightarrow y_1 + y_2 + \frac{1}{r}(y_1 + y_2) + \frac{1}{r^2}$$

$$-r + \frac{1}{r}(-\frac{1}{r}) + \frac{1}{r^2} = -r$$

$$x_1 \times x_2 = -r = \frac{b}{r} \rightarrow b = -r$$

$\left[\frac{-4 \times 1}{r} \right] = -r$

Subject :

Year :

Month :

Date :

$$x^2 + 4x + m = 0 \quad , \quad x^2 + 2x - 3m = 0$$

سوال ۱۰

$$x^2 + 4x + m - (x^2 + 2x - 3m) = 0 \quad \Sigma x + \Sigma m = 0$$

$$x + m = 0 \rightarrow x = -m$$

$$x^2 + 4x - x = 0 \quad x^2 + 3x = 0 \quad x(x + 3) = 0 \rightarrow x = -3 \rightarrow m = 3$$

$$x^2 + 4x + 0 = 0 \rightarrow (x+1)(x+3) = 0 \quad \begin{matrix} x = -1 & \text{غير مستر} \\ x = -3 & \text{مستر} \end{matrix}$$

$$x^2 + 2x - 18 = 0 \rightarrow (x+8)(x-3) = 0$$

$$\begin{matrix} x = -8 & \text{مستر} \\ x = 3 & \text{غير مستر} \end{matrix}$$

$$3 - (-1) = 4$$