زینب عافی کلاس A تکلیف شماره ۲۳

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سوال 1

$$\begin{cases} x_s = -1 \\ y_s = 9 \end{cases}$$

$y = a(x-1)(x-3)$

$$\begin{cases} 1 = 9a + 3b + c \\ 9 = a - b + c \end{cases}$$

$-8 = 8a + 4b$

$-2 = 2a + b$

$\rightarrow 2a = -2 - b \rightarrow \frac{-b}{2a} = \frac{-b}{-2-b} = -1$

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$\frac{b}{2+b} = -1 \rightarrow b = -1 \rightarrow a = -\frac{1}{2} \rightarrow c = 8/5 \Rightarrow y = -\frac{x^2}{2} - x + \frac{17}{2}$

(۲) $\Delta > 0 \rightarrow b^2 - 4ac,\ m^2 - 4(2)(m+6) = m^2 - 8m - 48 \Rightarrow (m-12)(m+4)$

$\frac{-4 \quad 12}{+ \quad \phi \quad - \quad \phi \quad +} \rightarrow m > 12,\ m < -4 \rightarrow (-\infty, -4) \cup (12, +\infty)$

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$S > 0 \rightarrow -\frac{b}{a} > 0 \rightarrow -\frac{m}{2} > 0 \rightarrow \frac{m}{2} < 0 \quad m < 2,\ P > 0 \rightarrow \frac{m+6}{2} > 0$

$m = (-6, 2) \quad m > -6$

(۳) $S = \frac{1}{P} \rightarrow -\frac{b}{a} = \frac{a}{c} = a^2 = -bc \rightarrow 9 = -(2m-1)(2-m) =$ ۵

$2m^2 - 5m + 2 - 9 = 2m^2 - 5m - 7 \xrightarrow{\text{روش}} m^2 - 5m - 14 = 0\ (m-7)(m+2)$

$m = \frac{7}{2},\ m = -1 \rightarrow \Delta > 0 \rightarrow m = -1 \quad 3x^2 - 3x + 1 = 0$

$\Delta = 9 - (4 \times 3 \times 1) \quad m = 3/5 \rightarrow 3x^2 - 6x - 1/5 = 0 \rightarrow \Delta = 36 + (4 \times 1/5$

$\boxed{m = 3/5}$

Arman

$(\sqrt[۳]{x^۲}+\frac{۱}{\sqrt[۳]{x^۲}}+۱)(\sqrt[۳]{x^۲}-۱) \xrightarrow{\times\sqrt[۳]{x^۲}} (\sqrt[۳]{x^۴}+۱+\sqrt[۳]{x^۲})(\sqrt[۳]{x^۲}-۱)$ _۵

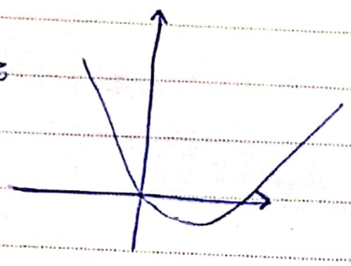
$x^۲-۱=۲x \Rightarrow x^۲-۲x-۱=۰ \to P=-۱ ,\ S=۲$

$\alpha+\beta=\frac{-(-a)}{۳}=\frac{a}{۳}$, $\alpha\cdot\beta=\frac{۲}{۳}$ ۲ _۶

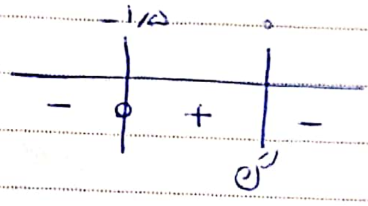
$\alpha(۳\alpha)=۳\alpha^۲=\frac{۲}{۳} \to \alpha=\pm\frac{۲}{۳} \Rightarrow a=۳(\alpha+\beta)=۳(\alpha+۳\alpha)=۱۲\alpha$

$\Rightarrow a_۱=۸$ و $a_۲=-۸$ ۱۶ = اختلاف دو $a=\frac{۲}{۳}$ ... $=-۸$

$a>۰ \longrightarrow$ چون برفی از مبدأ میره صفره ۳ _۷



$-\frac{b}{a}=\frac{-۳-۲a}{a}>۰$



$-\frac{۳}{۲}<a<۰$

$y=x^۲+ax-۲ \longrightarrow$ محور تقارن $\Rightarrow x=-\frac{a}{۲}$
$y=-x^۲-۲x+b \to$ // $\Rightarrow x=-۱$
$\Big\} -\frac{a}{2}=-۱ \Rightarrow a=۲$ ۳ _۸

$m^۲+۲m-۲=۱ \Rightarrow m^۲-۲m-۳=۰ \to m=۱ , -۳$

$b=۴$ که قرار دارد $y=-x^۲-۲x+b$ یعنی نقطه $(۱,۱)$ روی

روی نقطه $(-۳,۱)$ ها $b=۴$

$a\cdot b=۲\times۴=۸$

$۲x^۲-ax+b=۰$, $۲ax^۲+ax-۶=۰$ ۲ _۹

$S=\frac{a}{۲}$ $S'=S+۱=-\frac{a}{۲a}$

$۲x^۲-x+b=۰$, $۲x^۲+x-۶=۰$

روش ها $\Rightarrow (۲x+\frac{۴}{۲})(۲x-\frac{۳}{۳})=۰ \to x_۱=-۲$, $x_۲=۱/۵$

$x_۱x_۲=-۳$

$-۳=\frac{b}{۲}$ $b=-۶$

$\left[\frac{-۶\times۱}{۴}\right]=\left[-\frac{۳}{۲}\right]=-۲$

Arman

Scanned with CamScanner

۲ ۱۰)

$$\begin{cases} a^2+6a+m=0 \\ a^2+2a-3m=0 \end{cases} (a^2+6a+m)-(a^2-2a-3m)=0$$

$$4a+4m=0 \longrightarrow m=-a$$

$$a^2+6a+m=0 \Rightarrow a^2+6a-a=0 \to a^2+5a=0 \Rightarrow \begin{cases} \cancel{a=0} \\ a=-5 \end{cases}$$

$$x^2+6x+m=0 \longrightarrow x^2+6x+5=0 \Rightarrow (x+1)(x+5)=0$$

$$x^2+2x-3m=0 \quad x^2+2x-15=0 \Rightarrow (x-3)(x+5)$$

$$1--3=4$$

۲ ۲)

$$x_1 + x_2 = S = 1 \qquad x_1 x_2 = P = -4$$

$$S' = x_1^3 + \frac{1}{x_2} + x_2^3 + \frac{1}{x_1} = (S^3-3SP) + \frac{x_1+x_2}{x_1x_2}$$

$$=13 + -\frac{1}{4} = \frac{51}{4} \longrightarrow P' = \left(x_1^3+\frac{1}{x_2}\right)\left(x_2^3+\frac{1}{x_1}\right) = (x_1x_2)^3$$

$$+x_1^3\left(\frac{1}{x_1}\right) + \left(\frac{1}{x_2}x_2^3\right) + \frac{1}{x_1x_2} = \underbrace{(x_1x_2)^3}_{-64} + \underbrace{x_1^2 + x_2^2}_{9} + \underbrace{\frac{1}{x_1x_2}}_{-\frac{1}{4}}$$

$$= \frac{-221}{4} \longrightarrow x'^2 - \left(\frac{51}{4}\right)x' + \left(\frac{-221}{4}\right) = 0$$

$$(x')^2 - \frac{51}{4}x' - \frac{221}{4} = 0$$