نام و نام خانوادگی علی جلالیان .... پاسخنامه تشریحی تکلیف شماره ۱۹ کلاس یازدهم مهر A ....

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ریشه‌ها: $\alpha , 3\alpha$

$P = 3\alpha^2 = \frac{c}{a} = \frac{4}{3} \Rightarrow \frac{4}{3} = 3\alpha^2 \Rightarrow \alpha^2 = \frac{4}{9} \Rightarrow \alpha = \pm\frac{2}{3} , 3\alpha = \pm 2$

$S = \pm\frac{8}{3} \Rightarrow a = \pm 8 \Rightarrow$ اختلاف $= 8-(-8) = 16$

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$\begin{cases} \alpha+\beta = 1 \\ \alpha\beta = -2 \end{cases} \Rightarrow \begin{cases} \beta = 1-\alpha \\ \alpha(1-\alpha) = -2 \end{cases} \Rightarrow -\alpha^2+\alpha+2=0 \to \alpha^2-\alpha-2=0 \Rightarrow (\alpha-2)(\alpha+1)=0$

$\Rightarrow \begin{cases} \alpha=2 , \beta=-1 \\ \alpha=-1 , \beta=2 \end{cases} \Rightarrow$ چون فقط یک ریشه ۱- داریم پس باید جمع یک در میان با هم برابر باشد $\Rightarrow \overset{-5}{\overline{4-9}} = -2+k$

$\Rightarrow k=-3$

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$\sqrt{\frac{1}{\alpha}}+\sqrt{\frac{1}{\beta}} = 5 \xrightarrow{()^2} \frac{1}{\alpha}+\frac{1}{\beta}+2\sqrt{\frac{1}{\alpha\beta}}=25 \Rightarrow \frac{\alpha+\beta}{\alpha\beta}+2\sqrt{\frac{1}{\alpha\beta}} = 25$

$\Rightarrow \left.\begin{matrix} P=\frac{1}{36} \\ S=\frac{m+14}{36} \end{matrix}\right\} \Rightarrow \frac{\frac{m+14}{\cancel{36}}}{\frac{1}{\cancel{36}}} + 2\sqrt{\frac{1}{\frac{1}{36}}} \Rightarrow m+14+12 = 25$

$m+14 = 13 \Rightarrow m=-1$

$P = \frac{2}{m} = -2$

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$2(\underbrace{\alpha^2+\beta^2}_{s^2-2p})+\alpha^2 = 85+12\sqrt{2} \Rightarrow$

$\Rightarrow \alpha = \frac{-6\pm\sqrt{36-4a}}{2} \Rightarrow \alpha^2 = \frac{72-4a+12\sqrt{36-4a}}{4} \Rightarrow$ چون $\alpha^2+\beta^2$ گویا است پس $12\sqrt{2}$ برابر قسمت گنگ آن است

$\Rightarrow \frac{\overset{3}{\cancel{12}}\sqrt{36-4a}}{\cancel{4}} = 12\sqrt{2} \Rightarrow \sqrt{36-4a} = \sqrt{32} \Rightarrow a=1$

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$\begin{cases} x^4-7x^2-5=0 \\ 2p^2-\cancel{3sp}+\cancel{2s}=? \end{cases} \Rightarrow x^2=t \to x=\pm\sqrt{t} \to S=0 \Rightarrow t^2-7t-5=0$

$\Rightarrow t = \frac{7\pm\sqrt{69}}{2} \Rightarrow x = \pm\sqrt{\frac{7+\sqrt{69}}{2}}$

$\Rightarrow 2p^2 = 2\left(+\frac{7+\sqrt{69}}{2}\right)^2 = 2\left(\frac{49+69+14\sqrt{69}}{4}\right) = 59+7\sqrt{69}$

$2x^2 - ax + b = 0 \begin{cases} \alpha+\frac{1}{2} , \beta+\frac{1}{2} \to S' = \alpha+\beta+1 \to S' = \frac{1}{2} \to a = 1 \end{cases}$ $\Rightarrow P' = \alpha\beta + \frac{1}{2}(\alpha+\beta) + \frac{1}{4} \Rightarrow P' = P + \frac{1}{2}S + \frac{1}{4}$ $2ax^2 + ax - 6 = 0 \begin{cases} \alpha , \beta \to S = \alpha+\beta = -\frac{1}{2} \\ P = \alpha\beta = -3 \end{cases}$ $\Rightarrow \Delta P = \frac{1}{2}S + \frac{1}{4} = -\frac{1}{4} + \frac{1}{4} = 0$ $\Rightarrow b = -6$ $\Rightarrow \left[\frac{a \times b}{4}\right] = \left[\frac{-6 \times 1}{4}\right] = -2$	۶
$20\beta^2 + 20\beta^2 + 20\alpha^2 - 20\beta = 17 \Rightarrow 20(\beta^2+\alpha^2) + 20(\beta^2-\beta) = 17$ معادله اصلی را به a تقسیم میکنیم و یک طرف میبریم 2β [illegible] $\frac{b}{a}$ $\Rightarrow 20(\underbrace{S^2-2P}_{1+\frac{2b}{a}}) + 20(\cancel{\ldots}\frac{b}{a}) = 17$ $\Rightarrow 20 + \frac{40b}{a} + \frac{20b}{a} = 17 \Rightarrow \frac{60b}{a} = -3 \Rightarrow \frac{b}{a} = -\frac{1}{20}$ $\Rightarrow \frac{\sqrt{\Delta}}{\vert a\vert} = \frac{\sqrt{a^2+4ab}}{\vert a\vert} \Rightarrow \frac{\cancel{\vert a\vert}\sqrt{1+\frac{4b}{a}}}{\cancel{\vert a\vert}} = \sqrt{1-\frac{4}{20}} = \sqrt{\frac{16}{20}} = \frac{4}{2\sqrt{5}} = \frac{2}{\sqrt{5}}$	۷
$x^2 - (a+1)x + a = 0 \to \frac{\sqrt{\Delta}}{\vert a\vert} = 2 \Rightarrow \sqrt{a^2+2a+1} = 2 \Rightarrow a^2+2a-3 = 0 \begin{cases} a = 3 \checkmark \\ a = -1 \times \end{cases}$ $x^2 - 4x + 3 = 0 \to P_1 = 3$ $x^2 - 10x + b = 0 \begin{cases} \alpha+\beta = 10 \to \alpha = 4 , \beta = 6 \\ P_2 = 24 \to b = 24 \end{cases}$ $P_2 - P_1 = 21$	۸
$\alpha^2+\beta^2 = S^2-2P = 1-2(-1-m^2) = 1+2+2m^2 = 2m^2+3 \begin{cases} x_{min} = \frac{-b}{2a} = 0 \\ y_{min} = 3 \end{cases}$ $S = -1$ $P = -1-m^2$	۹
$x_S = \frac{-5+3}{2} = -1 \Rightarrow a(x+1)^2+1 = ax^2+2ax+a+1$ $\alpha^2+\beta^2 = 5 \Rightarrow S^2-2P = 5 \Rightarrow 4 - 2\left(\frac{a+1}{a}\right) = 5 \xRightarrow{\times a} 4a - 2(a+1) = 5a$ $\Rightarrow -a - 2a - 2 = 0 \Rightarrow a = -\frac{2}{3} \Rightarrow y = -\frac{2}{3}x^2 - \frac{4}{3}x + \frac{1}{3} \to$ عرض از مبدا	۱۰