نام و نام خانوادگی ..... پاسخنامه تشریحی تکلیف شماره ۱۹ کلاس .....

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$\beta = 3\alpha$

$\alpha + \beta = \frac{\alpha}{2} \Rightarrow \alpha = 3\alpha + 2\beta$

$2\beta = \frac{16}{3} \Rightarrow \alpha(3\alpha) = \frac{16}{3} \Rightarrow 3\alpha^2 = \frac{16}{3} \Rightarrow \begin{cases} \alpha = \frac{4}{3} \Rightarrow \beta = 4 \Rightarrow a = 8 \\ \alpha = \frac{-4}{3} \Rightarrow \beta = -4 \Rightarrow a = -8 \end{cases}$

$\alpha_1 - \alpha_2 = 8 - (-8) = 16$

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$36x^2 - (m+14)x + 1 = 0 \Rightarrow \sqrt{\frac{1}{\alpha}} + \sqrt{\frac{1}{\beta}} = S$

$\frac{1}{\alpha} + \frac{1}{\beta} + 2\sqrt{\frac{1}{\alpha\beta}} = 25 \Rightarrow (m+14) + (12) = 25 \Rightarrow S = \frac{-b}{a} = \frac{m+14}{36}$

$\frac{S}{P}$, $\alpha\beta = P$

$m + 14 = 12$, $m = -1$, $P = \frac{1}{36}$

$mx^2 + 4x + 2 = 0 \Rightarrow P' = \frac{2}{m} = -2$

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$4x^2 + Kx^2 - 9x - 2 = 0$

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

$x^2 - x = 4x^3 + Kx^2 - 9x \Rightarrow x(x-1) = x(4x^2 + Kx - 9)$

$\Rightarrow 4x^2 + x(K-1) - 8 = 0$

$\alpha\beta = -\frac{8}{4} = -2$, $S = \frac{-K+1}{4} = 1 \Rightarrow -K + 1 = 4$

$K = -3$

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$x^2 + 2\alpha^2 + 2\beta^2$

$2(\alpha^2 + \beta^2) = S^2 - 2P = (-4)^2 - 2(4) \Rightarrow 24 - 2a$

$\alpha = -2 - \sqrt{9-a}$

$\beta = -2 + \sqrt{9-a}$

$\underbrace{9 + (9-a)}_{18-a} + 4\sqrt{9-a} + \underbrace{2(24-2a)}_{48-4a} = 12\sqrt{2} + 80$

$9 - a + 4\sqrt{9-a} = 12\sqrt{2} + 80 \Rightarrow 57 - 5a + 4\sqrt{9-a} = 12\sqrt{2} \Rightarrow 14\sqrt{9-a} = 12\sqrt{2}$

$9 - a = 8 \Rightarrow a = 1$

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$x^4 - 7x^2 - 8 = 0 \Rightarrow$

$\begin{cases} 2P^2 - 4SP + 2S \\ \hookrightarrow x = t \Rightarrow t^2 - 7t - 8 = 0 \Rightarrow \Delta = 49 + 32 = 81 \end{cases}$

$t_1 = \frac{7 + \sqrt{49}}{2} > 0$ قبول

$t_2 = \frac{7 - \sqrt{49}}{2} < 0$ غ ق ق

$x^2 = t = \frac{7 + \sqrt{49}}{2} \Rightarrow x_1, x_2 = \pm\sqrt{\frac{7+\sqrt{49}}{2}} \Rightarrow \begin{matrix} S = 0 \\ P = \frac{7+\sqrt{49}}{2} \end{matrix}$

$2P^2 = 2\left(\frac{49 + 49 + 14\sqrt{49}}{4}\right)$, $2P^2 = \frac{118 + 14\sqrt{49}}{2} \Rightarrow 59 + \sqrt{49}$

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x را به z تبدیل کنید

$x=z+\frac{1}{2}$

$z=x-\frac{1}{2} \Rightarrow 2ax\left(x-\frac{1}{2}\right)^2+a\left(x-\frac{1}{2}\right)-6=2ax^2-ax-6$

$\Rightarrow 2ax^2-ax-6=2x^2-ax-6 \Rightarrow \left[\frac{ab}{4}\right]=\left[-\frac{3}{2}\right]=[-1.5]=-2$

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$ax^2-ax-b=0 \longrightarrow S=1,\quad a+b=1,\quad b=1-a \qquad P=-\frac{b}{a}$

$40\beta^2+20\alpha^2-20\beta=17$

$40(1-\alpha)^2+20\alpha^2-20(1-\alpha)=17 \Rightarrow 60\alpha^2-60\alpha+3=0 \Rightarrow S=1,\ P=\frac{1}{20}$

$|\alpha-\beta|=\sqrt{S^2-4P}=\frac{2}{\sqrt{5}}$

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$x^2-(a+1)x+a=0 \to$ دو عدد فرد متوالی $\to 2k+1,\ 2k-3$

$x^2-(3a+1)x+b=0 \to$ ۲ عدد زوج متوالی $\to 2k',\ 2k'+2$

$a=(2k+1)\times(2k-1)=4k^2-1$

$a+1=4k \Rightarrow a=4k-1$

$4k^2-4k=0,\quad 4k(k-1)=0,\quad k=1,\ k=0 \qquad a=3$

$b=4k'^2+4k' \Rightarrow 3a+1=4k'+2,\ a=3 \Rightarrow b=24 \Rightarrow |a-b|=|3-24|=21$

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$x^2+x-(1+m^2)=0$

$S^2-2P=(-1)^2-2(-(1+m^2))=1+2+2m^2 \Rightarrow 2m^2+3 \Rightarrow m=0$ → مینیمم

$\Downarrow$

$\alpha^2+\beta^2=3$

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$\frac{\alpha+\beta}{2}=\frac{-5+3}{2}=-1 \qquad \alpha^2+\beta^2=5 \Rightarrow (\alpha+\beta)^2-2\alpha\beta=5$

$S=-2 \qquad x_s=\frac{-2}{2}=-1 \qquad \alpha\beta=-\frac{1}{2}$

$y=a\left(x^2+2x-\frac{1}{2}\right) \Rightarrow 1=a\left(1-2-\frac{1}{2}\right) \Rightarrow a=-\frac{2}{3} \Rightarrow y=-\frac{2}{3}\left(x^2+2x-\frac{1}{2}\right) \Rightarrow y=\frac{1}{3}$