نام و نام خانوادگی ..... پاسخنامه تشریحی تکلیف شماره ۱۹ کلاس ۲۰ .....

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$\beta = 3\alpha$

$\alpha+\beta = \frac{a}{2} \longrightarrow \alpha = 3\alpha + 3\beta$

$a\beta = \frac{\varepsilon}{3} \longrightarrow \alpha(3\alpha) = \frac{\varepsilon}{3} \longrightarrow 3\alpha^2 = \frac{\varepsilon}{3} \longrightarrow \begin{cases} \alpha = \frac{2}{3} \longrightarrow \beta = 2 \longrightarrow a = 18 \\ \alpha = -\frac{2}{3} \longrightarrow \beta = -2 \longrightarrow a = -18 \end{cases}$

$\alpha_1 - \alpha_2 \longrightarrow 18 - (-18) = 36$

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$24x^2 - (m+12)x + 1 = 0 \longrightarrow \sqrt{\frac{1}{\alpha}} + \sqrt{\frac{1}{\beta}} = S$

$\frac{1}{\alpha} + \frac{1}{\beta} + 2\sqrt{\frac{1}{\alpha\beta}} = 25 \longrightarrow (m+16) + (18) = 25 \longrightarrow S = \frac{-b}{a} = \frac{m+16}{24}$

$\frac{S}{P}$

$m+16 = 13$

$m = -3$

$P = \frac{1}{24}$

$mx^2 + 12x + 6 = 0 \longrightarrow P' = \frac{2}{m} = -2$

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$4m^3 + 12m^2 - 9m - 6 = 0$

$\left.\begin{matrix} S=1 \\ P=-2 \end{matrix}\right\} m^2 - m - 2 = 0 \longrightarrow m^2 - m = 4m^3 + 12m^2 - 9m \rightarrow m(m-1) = m(4m^2 + 12m - 9)$

$\longrightarrow 4m^2 + m(12-1) - 9 = 0$

$a\beta = -\frac{\Delta}{\varepsilon} = -2 \longrightarrow S = \frac{-12+1}{4} = 1 \quad \begin{matrix} 4 = 1 + 12 \\ 12 = 3 \end{matrix}$

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$\alpha^2 + 2\alpha^2 + 6\beta^2 \longrightarrow 2(\alpha^2 + \beta^2) \longrightarrow S^2 - 2P \longrightarrow (-4)^2 - 2a = 24 - 2a$

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

$\alpha = -3 - \sqrt{9-a}$

$\beta = -3 + \sqrt{9-a}$

$9 - a + 4\sqrt{9-a} + 48 - 4a = 12\sqrt{2} + 18$

$90 - 20a + 4\sqrt{9-a} = 12\sqrt{2} + 18 \longrightarrow 72 - 20a + 4\sqrt{9-a} = 12\sqrt{2}$

$14\sqrt{9-a} = 12\sqrt{2} \longrightarrow 9 - a = 2 \longrightarrow a = 1$

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$3x^4 - 7x^2 - 5 = 0 \longrightarrow$

$2P^2 - 3SP + 6$

$x^2 = t \longrightarrow t^2 - 7t - 5 = 0 \longrightarrow \Delta = 49 + 20 = 69$

$t_1 = \frac{7 + \sqrt{69}}{2}$ بزرگ

$t_2 = \frac{7 - \sqrt{69}}{2} < 0$ غیق

$x^2 = t \longrightarrow \frac{7 + \sqrt{69}}{2}$

$2P^2 = 2\left(\frac{49 + 69 + 14\sqrt{69}}{4}\right) \longrightarrow 2P^2 = \frac{118 + 14\sqrt{69}}{2} = 59 + 7\sqrt{69}$

$x_1, x_2 = \pm\sqrt{\frac{7 + \sqrt{69}}{2}}$

$S = 0$

$P = \frac{7 + \sqrt{69}}{2}$

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

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

$\longrightarrow 2a\left(x-\frac{1}{2}\right)^2 + a\left(x-\frac{1}{2}\right) - 4 = 2ax^2 - ax - 4$

$2x^2 - ax + b = 0 \begin{cases} S = \frac{a}{2} \\ P = \frac{b}{2} \end{cases}$

$2ax^2 + ax - 4 \begin{cases} S = -\frac{1}{2} \to \alpha + \beta = \frac{1}{2} \\ P = -2 \\ b = -4 \end{cases}$ $\frac{a}{2} \to a = 1$ (ج)

$\left[\frac{ab}{4}\right] = -2$ ۶

$ax^2 - ax - b = 0 \begin{cases} S = 1 \\ \alpha + b = 1 \\ b = 1 - a \end{cases}$ $P = \frac{b}{a}$

$\frac{1}{4}\alpha\beta^2 + 2\alpha^2 - 2\beta = 17$

$4(1-\alpha)^2 + 2\alpha^2 - 2(1-\alpha) = 17 \to 4\alpha^2 - 4\alpha + 1 = 0$ (ب) $\begin{cases} S = 1 \\ P = \frac{1}{4} \end{cases}$

$|\alpha\beta| = \sqrt{S^2 - 4P} = \frac{2}{\sqrt{4}}$ ۲

$x^2 - (a+1)x + a = 0 \longrightarrow 2k+1,\ 2k-1$

$x^2 - (2a+1)x + b = 0 \longrightarrow 2k',\ 2k'+2$

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

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

$4k^2 - 4k = 0 \quad k = 1 \quad a = 3$

$4k(k-1) = 0 \quad k = 0$ (ب)

$b = 4k'^2 + 4k' = \frac{2a+1}{a=3}, \quad 4k^2 + 4 \to b = 4$

$|a-b| = |3-4| = 1$ ۱

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

$\Delta = (-1)^2 - 4(-(1+x^2)) = 1 + 4 + 4x^2 = 4x^2 + 3 \to x = 0$ (ج)

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$\alpha^2 + \beta^2 = 3$ ۹

$\frac{\alpha+\beta}{2} = \frac{-a+3}{2} = -1$

$S = -2 \qquad 2S = -\frac{4}{2} = -1$

$\alpha^2 + \beta^2 = 5 \quad (\alpha+\beta)^2 - 2\alpha\beta = 5$

$\alpha\beta = -\frac{1}{2}$

$y = a(x^2 + 2x - \frac{1}{4}) = 1 = a(1 - 2 - \frac{1}{4}) \to a = -\frac{4}{5}$ (ج)

$y = -\frac{4}{5}\left(x^2 + 2x - \frac{1}{4}\right)$

$y = \frac{1}{5}$ ۱۰