نام و نام خانوادگی: فرهام فروزنده .... پاسخنامه تشریحی تکلیف شماره ...19... کلاس یازدهم بیر B

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$3x^2 - ax + 4 = 0$

$\alpha = 3\beta \ , \ \alpha+\beta = \frac{a}{3} \ , \ \alpha\beta = \frac{4}{3}$

$3\beta + \beta = \frac{a}{3} \to 4\beta = \frac{a}{3} \to a = 12\beta \to a = \pm 2 \to 12(\pm 2) = \pm 8$

$\to 8 - (-8) = \boxed{16}$

$3\beta(\beta) = \frac{4}{3} \to 3\beta^2 = \frac{4}{3} \to \beta = \pm \frac{2}{3}$

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$36x^2 - (m+14)x + 1 = 0$

$\frac{1}{\sqrt{r_1}} + \frac{1}{\sqrt{r_2}} = 5 \Rightarrow \frac{\sqrt{r_1}+\sqrt{r_2}}{\sqrt{r_1 r_2}} = \frac{\sqrt{r_1+r_2+2\sqrt{r_1 r_2}}}{\sqrt{r_1 r_2}} = \frac{\sqrt{S+\frac{1}{3}}}{\frac{1}{6}} = 5$

$\Rightarrow \sqrt{S+\frac{1}{3}} = \frac{5}{6} \Rightarrow (\sqrt{r_1}+\sqrt{r_2})^2 = r_1+r_2+2\sqrt{r_1 r_2} < \begin{matrix} P = \frac{1}{36} \\ S = \frac{m+14}{36} = \frac{13}{36} \end{matrix} \Rightarrow m = -1$

$\Rightarrow S + \frac{1}{3} = \frac{25}{36} \Rightarrow S = \frac{13}{36} \Rightarrow mx^2 + 3x + 2 = 0 \Rightarrow P = \frac{2}{m} = \boxed{-2}$

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$4x^3 + kx^2 - 9x - 2 = 0 \to x^2 - (\alpha+\beta)x + \alpha\beta = x^2 - (1)x + (-2) = x^2 - x - 2$

$\to (x^2 - x - 2)(Px + q) \to Px^3 - Px^2 + qx^2 - qx - 2Px - 2q$

$\to Px^3 + (q-P)x^2 + (-q-2P)x - 2q \to P = 4 , q - P = k$

داران معادله وارد نزده $\to k = q - 4$

$\Rightarrow k = q - 4 \to 1 - 4 = \boxed{-3}$ $\Big\{ -q - 2P = -9 \Rightarrow q = 1$

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$x^2 + 6x + a = 0$ $\quad A = \alpha\beta = \alpha(-6-\alpha) = -\alpha^2 - 6\alpha \to -\frac{(24+\sqrt{836+240\sqrt{2}})}{100}$

$\alpha < \beta < 0$ $\quad + \frac{144 + 2\sqrt{8-6} + 24 + \sqrt{5}}{100} \Rightarrow A = 1$

$2a^2 + 2\beta^2 = 12\sqrt{2} + 85 \to 2a^2 + 2(-6-\alpha)^2 - 12\sqrt{2} + 85 = 12\sqrt{2} + 85$

$\alpha + \beta = -6 \ , \ \alpha\beta = A$

$\Rightarrow 5a^2 + 24\alpha + 72 - 85 - 12\sqrt{2} = 0$

$\beta = -6 - \alpha$

$\to a = \frac{-24 \pm \sqrt{24^2 - 4 \times 5 \times (-13 - 12\sqrt{2})}}{10}$

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$x^4 - 7x^2 - 5 = 0 \to +\sqrt{\frac{7+\sqrt{69}}{2}} \ , \ -\sqrt{\frac{7+\sqrt{69}}{2}} \to$ مجموع $= 0$

$2P^2 - 3SP + 2S = ?$

$\Rightarrow \left(-\sqrt{\frac{7+\sqrt{69}}{2}}\right)\left(\sqrt{\frac{7+\sqrt{69}}{2}}\right) = \frac{-7-\sqrt{69}}{2}$

$\to S = 0 \ , \ P = \frac{-7-\sqrt{69}}{2} \Rightarrow 2P^2 - 3SP + 2S = \boxed{59 + 7\sqrt{69}}$

$a = \frac{-24 - \sqrt{836+240\sqrt{2}}}{10} \ , \ \beta = \frac{-36 + \sqrt{836+240\sqrt{2}}}{10}$

$2x^2 - ax + b = 0$

$2ax^2 + ax - 6 = 0$

$\left[\frac{ab}{4}\right] = \left[\frac{-6}{4}\right] = -2 \longrightarrow \left[\frac{(1)(-6)}{4}\right] = \boxed{-2}$ 6

$\alpha + \beta = \alpha' + \beta' + 1 \rightarrow \frac{\alpha}{2} = \frac{-2}{2a} + 1 = \frac{1}{2} \rightarrow \alpha = 1 \rightarrow 2x^2 + x - 6 = 0$

$\rightarrow \alpha', \beta' = -2, \frac{3}{2} \longrightarrow \alpha, \beta = \frac{3}{2}, -2 \rightarrow \frac{b}{2} = \alpha\beta \Rightarrow b = -6$

$ax^2 - ax - b = 0 \qquad \longrightarrow \alpha + \beta = 1$

$40\beta^2 + 20\alpha^2 - 20\beta = 17 \qquad \alpha\beta = \frac{-b}{a} \longrightarrow \frac{b}{a} = -\frac{1}{20}$

$20\beta^2 + 20\alpha^2 + 20\beta^2 - 20\beta = 17$ 7

$20\left[(a+\beta)^2 - 2\alpha\beta\right] + 20(\beta^2 - \beta) = 17$

$2\left(1 + 2\frac{b}{a}\right) + 20 \cdot \frac{b}{a} = 17$

$(a-b)^2 = (a+\beta)^2 - 4\alpha\beta = 1 - \frac{1}{5} = \frac{4}{5} \rightarrow \alpha - \beta = \frac{2}{\sqrt{5}} = \frac{2\sqrt{5}}{5}$

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$x^2 + x - 1 - m^2 = 0 \longrightarrow \alpha + \beta = -1 \ , \ \alpha\beta = -1 - m^2$

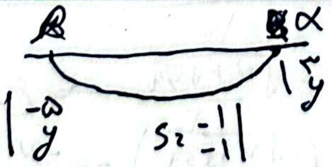
$\alpha^2 + \beta^2 = ? \longrightarrow (\alpha+\beta)^2 - 2\alpha\beta = (-1)^2 - 2(-1 - m^2) = 1 + 2 + 2m^2 = 3 + 2m^2$

$m = 0 \longleftarrow m^2 = 0$ کمترین مقدار 9

$\min(\alpha^2 + \beta^2) = 3 \longrightarrow 3 + 2(0) = \boxed{3}$

$A(3, y)$

$B(-5, y)$



$\frac{\alpha + \beta}{2} = \frac{-5+3}{2} = -1$

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

$\alpha^2 + \beta^2 = 5 \longrightarrow (a+\beta)^2 - 2\alpha\beta = 5 \rightarrow \alpha\beta = -\frac{1}{2} \rightarrow y = a\left(x^2 + 2x - \frac{1}{2}\right)$ 10

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