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نام و نام خانوادگی ......هستی صبوری.......... پاسخنامه تشریحی تکلیف شماره ....۱۹.... کلاس ...یازدهم تجربی A........

۱	$a, a_0 \sim x_1, x_2 \;,\; x_2 = 3x_1 \rightarrow 3x^2 - ax + 4 \xrightarrow{x_1} 3x_1^2 - ax_1 + 4 = 0$; $\xrightarrow{3x_1} 27x_1^2 - 3ax_1 + 4 = 0$ $\Rightarrow 24x_1^2 = 2ax_1 \rightarrow 12x_1 = a \rightsquigarrow 3x_1^2 - 12x_1^2 = -4 \rightarrow 9x_1^2 = 4$ $x_1^2 = \frac{4}{9} \rightarrow x_1 = \pm\frac{2}{3} \;,\; x_2 = \pm 2 \Rightarrow a = \pm 8 \rightarrow$ اختلاف ۲ مقدار $a = 16$
۲	$\frac{1}{\sqrt{\alpha}} + \frac{1}{\sqrt{\beta}} = 5 \rightarrow \frac{\sqrt{\beta}+\sqrt{\alpha}}{\sqrt{\alpha\beta}} \rightarrow (\sqrt{\beta}+\sqrt{\alpha})^2 = \underbrace{S + 2\sqrt{P}}_{\frac{m+14}{49}+2\sqrt{\frac{1}{49}}} = \frac{(5)^2}{49}$ $\frac{m+14}{49} + \frac{12}{49} = \frac{m+26}{49} = \frac{25}{49} \rightarrow m = -1$ $P \sim mx^2 + 3x + 2 \; ? \rightarrow \frac{2}{m} \xrightarrow{m=-1} \frac{2}{-1} = -2$
۳	$4x^3 + kx^2 - 9x - 2 = 0 \;,\; x^2 - \underset{1}{S}x + \overset{-2}{P} \Rightarrow x^2 - x - 2 \xrightarrow{\times(px+q)}$ $px^3 + qx^2 - px^2 - qx - 2px - 2q = 4x^3 + kx^2 - 9x - 2$ $\sim \left.\begin{matrix} p = 4 \\ q = 1 \\ q - p = k \end{matrix}\right\} \rightarrow 1 - 4 = k = \boxed{-3}$
۴	$\Delta = 36 - 4a \rightarrow \frac{-6 \pm \sqrt{36 - 4a}}{2} \rightarrow \left.\begin{matrix} -3 - \sqrt{9-a} \\ -3 + \sqrt{9-a} \end{matrix}\right\}$ $\sim 3(-3+\sqrt{9-a})^2 + 2(-3-\sqrt{9-a})^2 = 12\sqrt{8} + 85$ $90 - 5a - 6\sqrt{9-a} = 12\sqrt{8} + 85 \rightarrow -5a - 6\sqrt{9-a} = 12\sqrt{8} - 5$ $\boxed{a = 1}$
۵	$x^4 - 7x^2 - 5 = 0 \xrightarrow{x^2 = a} a^2 - 7a - 5 = 0 \rightarrow S = 7 \;,\; P = -5$ $2P^2 - 3SP + 2S \sim 2(-5)^2 - 3(7)(-5) + 14 = \boxed{149}$

$t^2 - 7t - 5 = 0 \rightarrow t = \frac{7 \pm \sqrt{69}}{2}$ غ ق ق

$x^2 = \frac{7+\sqrt{69}}{2} \rightarrow \begin{cases} x_1 = \sqrt{\frac{7+\sqrt{69}}{2}} \\ x_2 = -\sqrt{\frac{7+\sqrt{69}}{2}} \end{cases} \rightarrow S = 0 \;,\; P = \left(-\frac{7+\sqrt{69}}{2}\right)$

$2P^2 - 3SP + 2S = 59 + 7\sqrt{69}$

$x_1' = x_1 + \frac{1}{2}$, $x_2' = x_2 + \frac{1}{2}$ $\sim x_1' + x_2' = \underbrace{x_1 + x_2}_{-\frac{1}{2}} + 1 \sim \frac{1}{2} \Rightarrow a = 1$

$x_1' \times x_2' = \frac{1}{4} + x_1 x_2 + (x_1 + x_2)\frac{1}{2} = \frac{1}{4} \underbrace{-\frac{3}{2}}_{-\frac{12}{4}} - \frac{1}{4} = -3$ ۶

$\Rightarrow \frac{b}{2} = -3 \longrightarrow \boxed{b = -6}$

$\left[\frac{a \cdot b}{4}\right] = \left[\frac{-6}{4}\right] = -2$

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$\alpha + \beta = 1$, $\alpha \cdot \beta = \frac{-b}{a}$ $\sim 4 \cdot (1-\alpha)^2 + 4 \cdot \alpha^2 - 20 \cdot (1-\alpha) = 17$

$\beta = 1 - \alpha$

$\longrightarrow 40 \cdot \alpha^2 - 40 \cdot \alpha + 2 = 0 \xrightarrow{\div 2} 20 \cdot \alpha^2 - 20 \cdot \alpha + 1 = 0 \longrightarrow a = 20 , b = -1$ ۷

$20 \alpha^2 - 20 \cdot \alpha + 1 = 0 \sim |\alpha - \beta| = \frac{\sqrt{\Delta}}{|a|} \sim \frac{\sqrt{400 - 80}}{20} = \frac{2\sqrt{5}}{5}$

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$x^2 - (a+1)x + a = 0 \longrightarrow 1 - a - 1 + a = 0 \sim x_1 = 1 , x_2 = \frac{c}{a} \triangleright 3$

$x^2 - 4x + 3 = 0 \sim (x-1)(x-3) = 0 \longrightarrow x = 1 , x = 3$ $p = 3$ جواب مشترک

$x^2 - 10x + b \sim \alpha , \alpha + 2 \longrightarrow 2\alpha + 2 = 10 \longrightarrow \alpha = 4$ ۸

$\alpha + 2 = 6$ (۲) $a = 3$

$4p = 24$

$(3-1)(6-4) = 4$ $P_2 - P_1 = 21$

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$S = -1$, $P = -m^2 - 1$, $\alpha^2 + \beta^2 = S^2 - 2P = 1 + 2m^2 + 2$

$\sim 2m^2 + 3 \longrightarrow \min = \frac{-\Delta}{4a} = \frac{4 \times 2 \times 3}{8} = 3$ ۹

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$\underbrace{\alpha^2 + \beta^2}_{S^2 - 2P} = 5$ $\left\{ 9a + 3b + \cancel{c} = 25a - 5b + \cancel{c} \longrightarrow 8b = 16a \right.$ ($b = 2a$)

$\frac{-b}{2a} = -1$, $\frac{-\Delta}{4a} = 1$ ۱۰

$y = a(x+1)^2 + 1 \longrightarrow y = ax^2 + a + 2ax + 1$, $S^2 - 2P = 5$

$\left(\frac{2a}{a}\right)^2 - 2\left(\frac{a+1}{a}\right) = 5 \longrightarrow a = -\frac{2}{3}$, $c = a + 1 = \frac{1}{3}$

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