نام و نام خانوادگی ......صبا ادهم...... پاسخنامه تشریحی تکلیف شماره ...۱۹.. کلاس ......یازدهم B......

۱

$\alpha = 3\beta$
$\alpha\beta = \frac{4}{3} \rightarrow 3\beta \times \beta = \frac{4}{3} \rightarrow \beta^2 = \frac{4}{9} \rightarrow \beta = \pm\frac{2}{3} \rightarrow \alpha = \pm 2$

$\alpha + \beta = \frac{a}{3} \rightarrow \begin{cases} 2 + \frac{2}{3} = \frac{a}{3} \rightarrow \frac{8}{3} = \frac{a}{3} \rightarrow a = 8 \\ -2 - \frac{2}{3} = \frac{a}{3} \rightarrow a = -8 \end{cases}$ $\quad 8-(-8) = \boxed{16}$

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$36x^2 - (m+14)x + 1 = 0 \qquad \frac{1}{\sqrt{a}} + \frac{1}{\sqrt{b}} = 5 \xrightarrow{\text{توان ۲}} \frac{1}{a} + \frac{1}{b} + \frac{2}{\sqrt{ab}} = 25$

$S = a + b = \frac{m+14}{36} \qquad P = \frac{1}{36} \rightarrow \frac{1}{a} + \frac{1}{b} = \frac{\frac{m+14}{36}}{\frac{1}{36}} = m+14 \quad , \quad \sqrt{ab} = \sqrt{\frac{1}{36}} = \frac{1}{6}$

$\rightarrow \frac{2}{\sqrt{ab}} = 12 \qquad m + 14 + 12 = 25 \rightarrow \boxed{m = -1} \qquad mx^2 + 3x + 2 = 0 \rightarrow P = \frac{2}{m} = \boxed{-2}$

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$\alpha + \beta = 1 \quad \alpha\beta = -2 \rightarrow x^2 - x - 2 = 0 \rightarrow 4x^3 + kx^2 - 9x - 2 = (x^2 - x - 2)(Ax + B)$

$\rightarrow Ax^3 + (B-A)x^2 + (-B-2A)x - 2B = 4x^3 + kx^2 - 9x - 2$

$A = 4$

$-2B = -2 \rightarrow B = 1$

$B - A = k \rightarrow 1 - 4 = \boxed{-3 = k}$

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$3\alpha^2 + 2\beta^2 = 2\alpha^2 + 2\beta^2 + \alpha^2 = 12\sqrt{2} + 85 \qquad \Delta = 36 - 4a \qquad \alpha = \frac{-6 - \sqrt{36-4a}}{2}$

$\rightarrow \alpha^2 = \frac{36 + 36 - 4a + 12\sqrt{36-4a}}{4} \rightarrow \frac{\cancel{12}^{3}\sqrt{36-4a}}{\cancel{4}} = 12\sqrt{2} \rightarrow \sqrt{36-4a} = 4\sqrt{2}$

$\rightarrow 36 - 4a = 32 \rightarrow \boxed{a = 1}$

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مجموع ریشه‌ها در صفرات $(x^4 - 7x^2 - 5)$ $\longrightarrow 2p^2 - 3\cancel{s}p + \cancel{2s} = 2p^2 \qquad x^2 = t \rightarrow t^2 - 7t - 5 = 0$

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

$\rightarrow t_1 = \frac{7+\sqrt{69}}{2} \qquad t_2 = \frac{7-\sqrt{69}}{2}$ } غ ق ق چون $x^2 \geq 0$

$\rightarrow x_1 = \sqrt{\frac{7+\sqrt{69}}{2}} \qquad x_2 = -\sqrt{\frac{7+\sqrt{69}}{2}} \rightarrow P = -\sqrt{\frac{(7+\sqrt{69})^2}{4}} \rightarrow 2P^2 = 2\left(\frac{(7+\sqrt{69})^2}{4}\right) =$

$\frac{(7+\sqrt{69})^2}{2} = \frac{49 + 69 + 14\sqrt{69}}{2} = \boxed{59 + 7\sqrt{69}}$

$2ax^2+ax-6=0$ $\quad S=x_1+x_2=-\frac{a}{2a}=-\frac{1}{2}$ $\quad P=-\frac{6}{2a}=-\frac{3}{a}$

$2x^2-ax+b=0$ $\quad S=x_1+x_2+1=-\frac{1}{2}+1=\frac{1}{2}=\frac{a}{2}\to\boxed{a=1}$ $\quad P=x_1x_2+\frac{1}{2}(x_1+x_2)+\frac{1}{4}=$ 6

$-3+\frac{1}{2}(-\frac{1}{2})+\frac{1}{4}=-3\to\frac{b}{2}=-3\to b=-6.$ $\quad \left[\frac{ab}{4}\right]=\left[-\frac{6}{4}\right]=\boxed{-2}$

$ax^2-ax-b=0\to ax^2=ax+b\to x^2=x+\frac{b}{a}\to\beta^2=\beta+\frac{b}{a}$ و $\alpha^2=\alpha+\frac{b}{a}$

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

$20(\alpha+\beta)+60\frac{b}{a}=17\to 60\frac{b}{a}=-3\to\frac{b}{a}=-\frac{1}{20}$ 7

$|\alpha-\beta|=\frac{\sqrt{\Delta}}{|a|}=\frac{1}{|a|}\sqrt{a^2+4ab}=\sqrt{1+\frac{4b}{a}}=\sqrt{1-\frac{4}{20}}=\sqrt{1-\frac{1}{5}}=\boxed{\frac{2}{\sqrt{5}}}$

$x^2-(a+1)x+a=0$ $\quad$ ریشه‌ها: $2n-1$ ، $2n+1$ $\quad S=a+1=4n\to a=4n-1$

$P=a=4n^2-1\to 4n^2-1=4n-1$

$\to a=4(1)-1=3\to P=3$ $\quad 4n(n-1)=0$ ، $n=0$ ریشه‌ها منفی غ‌ق‌ق ، $n=1$ 8

$x^2-(3a+1)x+b=0\xrightarrow{a=3}x^2-10x+b=0\to$ ریشه‌ها: $2k$ ، $2k+2$ $\quad S=10=4k+2\to\boxed{k=2}$

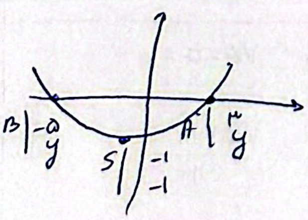
ریشه‌ها: $4,6$

$P=4\times6=24$ $\quad 24-3=P_2-P_1=\boxed{21}$

$x^2+x-(1+m^2)=0\to\alpha+\beta=-1=S$ $\quad \alpha^2+\beta^2=S^2-2P=1+2+2m^2=3+2m^2$

$P=\alpha\beta=-(1+m^2)$

$m^2\geq0\to$ کمترین مقدار $\to m=0$ $\quad m=0\to 3+2m^2=3$ کمترین مقدار 9



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

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

$y=a(x^2+2x-\frac{1}{2})\to 1=a(1-2-\frac{1}{2})\to a=-\frac{2}{3}$ 10

$\to y=-\frac{2}{3}(x^2+2x-\frac{1}{2})\xrightarrow{x=0}y=-\frac{2}{3}\times-\frac{1}{2}=\boxed{\frac{1}{3}}$