نام و نام خانوادگی ...آرمیتا میرزایی... پاسخنامه تشریحی تکلیف شماره ...۱۹... کلاس ...یازدهم ریاضی B...

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

$\alpha \quad 3\alpha$

$P = \frac{4}{3} = 3\alpha^2 \rightarrow \alpha = \frac{2}{3}$ یا $\alpha = -\frac{2}{3}$

$\alpha = \frac{2}{3} \rightarrow 3 \times \frac{4}{9} - \frac{2}{3}a + 4 = 0 \rightarrow \frac{16}{3} = \frac{2}{3}a \rightarrow a = 8$

$\alpha = -\frac{2}{3} \rightarrow 3 \times \frac{4}{9} + \frac{2}{3}a + 4 = 0 \rightarrow -\frac{16}{3} = \frac{2}{3}a \rightarrow a = -8$

$\Delta a = 16$

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

$\alpha \quad \beta$

$\frac{1}{\sqrt{\alpha}} + \frac{1}{\sqrt{\beta}} = 5 \rightarrow \frac{\sqrt{\alpha} + \sqrt{\beta}}{\sqrt{\alpha\beta}} = 5$

$\sqrt{\alpha\beta} = \frac{1}{36}$

$6(\sqrt{\alpha} + \sqrt{\beta}) = 5$

$\sqrt{\alpha} + \sqrt{\beta} = \frac{5}{6}$

$\alpha + \beta + 2\sqrt{\alpha\beta} = \frac{25}{36} \rightarrow \alpha + \beta = \frac{13}{36} \rightarrow \frac{m+14}{36} = \frac{13}{36}$

$m = -1$

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

$P = -2$

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$x^3 + kx^2 - 9x - 2 = 0$

$\alpha \quad \beta$

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

$(x-2)(x+1) = 0 \rightarrow x = 2$ یا $x = -1$

$x = 2 \rightarrow 32 + 4k - 18 - 2 = 0 \rightarrow k = -3$

$x = -1 \rightarrow -4 + k + 9 - 2 = 0 \rightarrow k = -3$

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$x^2 + 4x + a = 0$, $\alpha < \beta < 0$

$\alpha \quad \beta$

$S = -4$

$P = a$

$\alpha, \beta = \frac{-4 \pm \sqrt{16 - 4a}}{2} = -2 \pm \sqrt{4 - a}$

$\alpha = -2 - \sqrt{4 - a}$

$2(\alpha^2 + \beta^2) + \alpha^2 = 12\sqrt{2} + 18$

$2(\alpha + \beta)^2 - 2\alpha\beta + \alpha^2 = 12\sqrt{2} + 18$

$2(16 - 4a) + 4 - a + 4\sqrt{4 - a} = 12\sqrt{2} + 18$

$36 - 9a + 4\sqrt{4 - a} = 12\sqrt{2} + 18$

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

$a = 1$

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

$x^2 = \frac{7 \pm \sqrt{49 + 32}}{2}$ $\xrightarrow{x^2 > 0}$ $x^2 = \frac{7 + \sqrt{49}}{2}$

$x = \sqrt{\frac{7 + \sqrt{49}}{2}}$ یا $x = -\sqrt{\frac{7 + \sqrt{49}}{2}}$

$S = 0$

$P = -\frac{7 + \sqrt{49}}{2}$

$2P^2 - 3S^2 + 4S = 2 \times \frac{49 + 49 + 14\sqrt{49}}{4} = 49 + 7\sqrt{49} = 49 + 35$

$= 84$

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

α β

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

$P=\alpha\beta=-\frac{4}{2a}=-2$

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

$\alpha+.1\Omega$ $\beta+.1\Omega$

$S=\alpha+\beta+1=\frac{1}{2}$ → $\frac{1}{2}=\frac{a}{4}$ → $a=1$ → $S'=\frac{1}{2}$

$P=\alpha\beta+.1\Omega(\alpha+\beta)+.1\Omega=2\alpha\beta=-2$ → $P'=-2$

$\frac{b}{2}=-2$

$b=-4$

$\left[-\frac{4ab}{2}\right]=-2$

-1Ω

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$ax^2-ax-b=0$ → $S=1$, $P=-\frac{b}{a}$ → $x^2-x-\frac{b}{a}=0$

α β

$\beta^2-\beta=\frac{b}{a}$

$4\beta^2+2\alpha^2-2\alpha\beta=17$

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

$2(\beta^2+\alpha^2)+2\beta^2-2\alpha\beta=17$

$2(1+\frac{2b}{a})+2(\frac{b}{a})=17$

$2+\frac{6b}{a}=17$ → $\frac{6b}{a}=-3$ → $-2b=a$

اختلاف ریشه‌ها → $\frac{\sqrt{\Delta}}{|a|}=\frac{\sqrt{4b^2-8b^2}}{|-2b|}=\frac{\sqrt{36b^2}}{|4b|}=\frac{8\sqrt{5}}{4}=\frac{2\sqrt{5}}{5}$

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

ریشه‌ها ۲ عدد فرد متوالی هستند

$\frac{\sqrt{\Delta}}{|a|}=2$ → $\sqrt{(a+1)^2-4a}=2$ → $\sqrt{(a-1)^2}=2$ → $|a-1|=2$

$a-1=2$ → $a=3$ ✓

$a-1=-2$ → $a=-1$ ×

$P>0$ → $a>0$

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

↓

$x^2-10x+b=0$

$\frac{\sqrt{\Delta}}{|a|}=2$

$\sqrt{100-4b}=2$

$\frac{100-4}{4}=b$ → $b=24$

$\Delta P=|a-b|$

$|3-24|=21$

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$x^2+x-1-m^2=0$ $S=-1$, $P=-1-m^2$

α β

$\alpha^2+\beta^2=S^2-2P=1+2m^2+2=2m^2+3$ → $\min_{\alpha^2+\beta^2}=3$

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$B(-a,y)$, $A(3,y)$

$\det\begin{vmatrix}-1 & 1\\ 1 & 1\end{vmatrix}$

$S=-\frac{b}{a}=-2$

$\alpha^2+\beta^2=(\alpha+\beta)^2-2\alpha\beta=8$ → $4-2\alpha\beta=8$ → $-2\alpha\beta=4$ → $-\frac{1}{2}=\alpha\beta$

$\xrightarrow[y=1]{x=-1}$ $1=(-\frac{3}{2})a$ → $a=-\frac{2}{3}$

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

$y=-\frac{2}{3}x^2-\frac{4}{3}x+\frac{1}{3}$

عرض از مبدأ: $-\frac{1}{2}+-\frac{2}{3}=\frac{1}{3}$

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