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

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$3x^2 - ax + 4 = 0$
$\alpha = 3\beta \Rightarrow S = \frac{a}{3} = 4\beta$
$P = 3\beta^2 = \frac{4}{3} \quad \beta^2 = \frac{4}{9} \quad \beta = \pm\frac{2}{3}$
$\beta = \frac{2}{3} \to \frac{a}{3} = \frac{8}{3} \quad \boxed{a = 8}$ $\quad 8 - (-8) = 16$
$\beta = \frac{-2}{3} \quad \frac{a}{3} = \frac{-8}{3} \quad \boxed{a = -8}$
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$36x^2 - (m+14)x + 1 = 0 \quad S = \frac{m+14}{36} \quad P = \frac{1}{36}$
$\frac{1}{\sqrt{\alpha}} + \frac{1}{\sqrt{\beta}} = 5 \quad \frac{\sqrt{\alpha}+\sqrt{\beta}}{\sqrt{\alpha\beta}} = \frac{\sqrt{\alpha}+\sqrt{\beta}}{\frac{1}{6}} = 5 \quad \sqrt{\alpha}+\sqrt{\beta} = \frac{5}{6} \xrightarrow{\text{توان ۲}} \alpha+\beta+\frac{2}{6} = \frac{25}{36}$
$\alpha+\beta = \frac{25-12}{36} = \frac{13}{36} \quad \frac{m+14}{\cancel{36}} = \frac{13}{\cancel{36}} \quad \boxed{m = -1} \to -x^2+3x+2 \Rightarrow \frac{c}{a} = -2$
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$4x^3 + kx^2 - 9x - 2 = 0 \quad \alpha\beta = -2 \quad \alpha = 2$
$(\alpha+\beta)^2 = 1 = \alpha^2+\beta^2-4 \quad \alpha+\beta = 1 \Longrightarrow \beta = -1$
$\xrightarrow{x=2} 4\times 8 + 4k - 18 - 2 = 0 \quad k = -3$
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$x^2+6x+a=0 \quad \alpha<\beta<0 \quad S=-6 \quad P=a \quad |\alpha-\beta| = \frac{\sqrt{\Delta}}{|a|} = \frac{\sqrt{36-4a}}{1}$ چون هردو منفی
$\alpha-\beta = -2\sqrt{9-a}$
$3\alpha^2+2\beta^2 = 12\sqrt{2}+85$
$2,5(\underbrace{\alpha^2+\beta^2}_{36-2a}) + 0,5(\alpha^2-\beta^2) = 90 - 5a + \underbrace{6\sqrt{9-a}}_{12\sqrt{9-a}} = 85 + 12\sqrt{2}$
$\boxed{a = 1}$
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$x^4 - 7x^2 - 5 = 0$
$x^2 = t \quad t^2 - 7t - 5 = 0 \quad t = \frac{+7+\sqrt{69}}{2}$
$\Delta = 49+20 = 69 \quad S = 0$
$x = \pm\sqrt{\frac{7+\sqrt{69}}{2}} \quad P = -\frac{7-\sqrt{69}}{2}$
$2P^2 = \cancel{2}\left(\frac{49+69+14\sqrt{69}}{\cancel{4}\,2}\right) = \frac{118+14\sqrt{69}}{2} = 59+7\sqrt{69}$
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$2x^2 - ax + b = 0$ $\qquad$ $2ax^2 + ax - 6 = 0$

$S: \alpha + \frac{1}{2} + \beta + \frac{1}{2} = \frac{a}{2}$ $\qquad$ $S: \alpha + \beta = -\frac{1}{2}$ $\qquad$ $P = -3$ $\qquad$ 2

$\alpha + \beta = \frac{a}{2} - 1$ $\qquad$ $-\frac{1}{2} = \frac{a}{2} - 1$ $\qquad$ $\boxed{a = 1}$ $\qquad$ 6

$P = (\alpha + \frac{1}{2})(\beta + \frac{1}{2}) = \alpha\beta + \frac{1}{2}(\alpha + \beta) + \frac{1}{4} = \frac{b}{2}$

$-3 - \cancel{\frac{1}{4}} + \cancel{\frac{1}{4}} = \frac{b}{2}$ $\qquad$ $\boxed{b = -6}$ $\qquad$ $[\frac{ab}{4}] = [\frac{-6}{4}] = -2$

$ax^2 - ax - b = 0$ $\qquad$ $20\beta^2 + 20\alpha^2 - 20\beta = 17$

$\alpha + \beta = 1$

$\alpha\beta = \frac{-b}{a}$ $\qquad$ $20(\beta^2 + \beta) + 20(\beta^2 + \alpha^2) = 17$ $\qquad$ 2 $\qquad$ 7

$a(\beta^2 - \beta) = b$ $\qquad$ $20(\frac{b}{a}) + 20(\underbrace{S^2 - 2P}_{1 - \frac{2b}{a}}) = 17$

$\frac{20b}{a} + 20 + \frac{40b}{a} = 17$ $\qquad$ $60\frac{b}{a} = -3$ $\qquad$ $\frac{b}{a} = \frac{-1}{20}$

$|\alpha - \beta| = \frac{\sqrt{\Delta}}{|a|} = \sqrt{1 - \frac{4b}{a}} = \sqrt{\frac{24}{20}} = \frac{2}{\sqrt{20}}$

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

(2) $x^2 - (3a+1)x + b = 0$ $\qquad$ $2k', 2k'+2$

$P_1 = a = (2k+1)(2k-1) = 4k^2 - 1$, $S = 4k = a + 1$ $\qquad$ $a = 4k - 1$ $\qquad$ $k^2 = k$, $k = \cancel{0}, 1$ $\qquad$ $a = 3$ $\qquad$ 8

$P_2 = b = 4k'^2 + 4k'$, $S = 4k' + 2 = 3a + 1 = 10$ $\qquad$ $k' = 2$ $\qquad$ $P_2 = b = 16 + 8 = 24$ $\qquad$ 2

$24 - 3 = 21$

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

$S = -1$

$P = \alpha\beta = -(1 + m^2) \xrightarrow{\min} m = 0$ $\qquad$ 9

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$\left| \begin{array}{c} -1 \\ 1 \end{array} \right.$ رأس $\qquad$ $y = a(x+1)^2 + 1$

طول رأس سهمی $= \frac{-5+3}{2} = -1$

$0 = ax^2 + 2ax + a + 1$ $\qquad$ $\alpha^2 + \beta^2 = 5$

$S = \frac{-2a}{a} = -2$ $\qquad$ $P = \frac{a+1}{a}$ $\qquad$ $4 - \frac{2(a+1)}{a} = 5$ $\qquad$ 2 $\qquad$ 10

$\frac{-2a-2}{a} = 1$ $\qquad$ $-2a - 2 = a$

$a = -\frac{2}{3}$

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

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