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امیر محمد فرزوجاتی

یازدهم پسر B

تکلیف ۱۳

۲

$y=(a-1)x^2+x+3 \qquad -\frac{b}{2a}=2 \rightarrow \frac{-1}{2a-2}=2 \rightarrow 3=4a \rightarrow a=\frac{3}{4}$

$(\frac{3}{4}-1)x^2+x+3 \rightarrow -\frac{x^2}{4}+x+3 \xrightarrow{\times -4} x^2-4x-12=0 \rightarrow (a-6)(a+2)=0$

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$f(x)=mx^2-5x+m \qquad m<0$

x_1		x_2
$-$	$+$	$-$

$x=\frac{5\pm\sqrt{25-4m^2}}{2m} \qquad \Delta=25-4(m)(m)$

$\rightarrow 25-4m^2>0 \rightarrow \cancel{m<\frac{5}{2}} \rightarrow \cancel{\frac{5}{2}}<0$

$\cancel{(\frac{5}{2},0)} \qquad (-\frac{5}{2},0)$

$-\frac{5}{2}<m<\frac{5}{2}$

$m<0$ بود!

۲

$S=\frac{3-\sqrt{5}}{3}+\frac{3+\sqrt{5}}{3}=\frac{6}{3}=2 \qquad P=\frac{(3-\sqrt{5})}{3}\times\frac{(3+\sqrt{5})}{3}=\frac{4}{9}$

$x^2-2x+\frac{4}{9}=0 \xrightarrow{\times 9} \boxed{9x^2-18x+4=0}$

۲

$2x^2-8x+m+2=0 \qquad \alpha<\beta \qquad 3\alpha^2+\beta^2=12 \qquad m=? \rightarrow \alpha+\beta(3\alpha+\beta)=12$

$S=-\frac{b}{a}=\alpha+\beta=4 \rightarrow \beta=4-\alpha$

$3\alpha^2+(4-\alpha)^2=12 \rightarrow 3\alpha^2+16+\alpha^2-8\alpha=12$

$4\alpha^2-8\alpha+16=12 \rightarrow 4\alpha^2-8\alpha+4=0 \xrightarrow{\div 4} \alpha^2-2\alpha+1=0 \rightarrow (\alpha-1)^2=0$

$\beta=4-1=3 \qquad \alpha\times\beta=3=\frac{m+2}{2} \rightarrow m+2=6 \rightarrow m=4 \qquad \alpha=1$

۱/۷۵

$S(2,9) \qquad y=a(x-2)^2+9 \rightarrow y=0 \rightarrow 0=a(5-2)^2+9 \rightarrow 9a+9=0$

$-9=9a$

$a=-1$

$y=a(x-h)^2+k \qquad -(x-2)^2+9=-x^2-4+4x+9 \rightarrow -x^2+4x+5$

$-1 \qquad x^2-4x-5 \cancel{<0} \rightarrow (x-5)(x+1)>0 \rightarrow$

	-1		5	
$+$		$-$		$+$

$\rightarrow y>0 \rightarrow -x^2+4x+5>0$

$\cancel{[5,\infty) \cup (-\infty,-1)}$

جهت برعکس میشه!

$(-1,5)$

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محمدفروبان

$\alpha x^2 - 7x + 9\beta = 0$ $\quad \beta > 0 \quad \frac{1}{\alpha} + \frac{1}{\beta} = ?$ **۲**

و $\alpha^2 - 7\alpha + 9\beta = 0$

$\frac{9\beta}{\alpha} = \alpha\beta \to \alpha = 3 \to 3x^2 - 7x + 9\beta = 0$

$\alpha = -3 \to -3x^2 - 7x + 9\beta = 0 \xrightarrow{\Delta>0} \beta > 0$

$\Delta = 49 - 4(3)(9\beta)$ $\quad 49 - 4(-3)$

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

$-\frac{b}{a} = \frac{7}{a} = -\frac{7}{3} = -3 + \beta$

$-7 = -9 + 3\beta \to 3\beta = 2 \to \beta = \frac{2}{3}$

$= \frac{1}{-3} + \frac{3}{2} = \frac{-2+9}{6} = \frac{7}{6}$

$x^2 + mx - 2m = 0 \quad \alpha^2 - m\beta = 8 \quad S = ?$ $\quad \alpha^2 + m\alpha - 2m = 0 \to \alpha^2 = 2m - m\alpha$ **۲**

$S = -\frac{b}{a} \to -\frac{m}{1} \quad P = \frac{c}{a} \to \frac{-2m}{1} = -2m$ $\quad \alpha^2 - m\beta = 8 \to 2m - m\alpha - m\beta = 8$

$-m(-2 + \alpha + \beta) = 8$

$2m + m^2 = 8 \to m^2 + 2m - 8 = 0 \to (m+4)(m-2) = 0$ $\quad -4, \ 2$ $\quad \alpha + \beta = -4 + 2 = -2$

$\alpha + \beta = 4$

$y = mx^2 + 4x + \frac{m}{2} + 7 \quad m < 0$ **۱,۷۵**

$-\frac{b}{2a} = -\frac{4}{2m} = -\frac{2}{m} \to m\left(-\frac{2}{m}\right)^2 + 4\left(-\frac{2}{m}\right) + \frac{m}{2} + 7 = 8 \to \frac{4}{m} - \frac{8}{m} + \frac{m}{2} + 7$

$-\frac{\Delta}{4a} \to \frac{-(16 - 4(m)(\frac{m}{2} + 7))}{4m} = 8 \to \frac{-16 + 2m^2 + 28m}{4m} = 8 \to 2m^2 + 28m - 16 = 32m$

$2m^2 - 4m - 16 = 0 \to (m-8)(m+4) = -\frac{4}{2}, \frac{8}{2} \xrightarrow{m<0} -2 = m$

$-2x^2 + 4x - 1 + 7 \to -2x^2 + 4x + 6 \to x^2 + 4x - 12 = 0 \to (x+6)(x-2) = 0$ $\quad \cancel{2}, \ \cancel{-6}$ $\quad -1, \ 3$

آفرین یادت رفت دوباره به ۲- تقسیم کنی

$c = 4 \quad -\frac{b}{2a} = 2 \to \frac{1}{2}\left(-\frac{b}{a}\right) = 2 \to -\frac{b}{a} = 4 \to S = 4$ $\quad -\frac{b}{2a} = 2$ **۰**

$b = -4a$

$\alpha x^2 - 4\alpha x + 4 = 0 \to \alpha(x^2 - 4x) + 4 = 0$ $\quad -4a$

$\frac{c}{a} = \frac{4}{a}$ $\quad \alpha(x-2)^2 = 0 \to \cancel{\alpha}\ x = 2$ $\quad -\left(-\frac{4a}{2a}\right) = 2$

$\frac{1}{\alpha} + \frac{1}{\beta} \to \frac{\alpha + \beta}{\alpha\beta} \to \frac{2a}{a} \times \frac{a}{4} = \frac{2a}{4} \to \frac{a}{2} = \frac{2}{2} = \cancel{\alpha}$ جواب صفحه بعد...

$x^2 - (4a+4)x + (3a^2 + 6a + 3) = 0$ $\quad x_1 = 2 \quad x_2 = ?$ **۲**

۲) $4 - (4a+4)2 + (3a^2 + 6a + 3) = 0 \to 3a^2 - 2a - 1 = 0 \to a^2 - 2a - 3 = 0$

$(a-3)(a+1) = 0$ $\quad -\frac{1}{3}, \ \frac{3}{3}$

$S = \frac{-b}{a} \to 4a + 4 = x_1 + x_2 \to x_2 = 4a + 4 - x_1 \to 4a + 4 - 2 = 4a + 2 \xrightarrow{a=1} 4 + 2 = 6$

$a = -\frac{1}{3}$ $\quad -\frac{4}{3} + 2 = \frac{2}{3}$

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$$y = a(x-۲)^۲ + ۶ \xrightarrow{(۰,۴)} ۴ = ۴a + ۶ \rightarrow a = \frac{-۱}{۲}$$

$$y = \frac{-۱}{۲}(x-۲)^۲ + ۶ = x^۲ - ۴x - ۸$$

خواسته سوال : $\frac{۱}{\alpha} + \frac{۱}{\beta} = \frac{S}{P} = \boxed{\frac{-۱}{۲}}$