باران عباسی — تکلیف ۲۲ — دهم دفتر B

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① (1)

① $a^2=5a-2$ ② $\beta^2-5\beta+2=0 \to \beta^2=5\beta-2 \to \beta(5\beta-2) \to 5\beta^2-2\beta \to 5(5\beta-2)-2\beta \to$

③ $23\beta-10 \xrightarrow{\times\beta} 23\beta^2-10\beta \to 23(5\beta-2)-10\beta \to 105\beta-46$

④ $105\beta-46 \xrightarrow{\times\beta} 105\beta^2-46\beta \to 105(5\beta-2)-46\beta \to 479\beta-210=\beta^5$

صورت $4\alpha+\beta^5 \to 4\alpha+479\beta-210 \to \alpha^2-5\alpha+2=\beta^2-5\beta+2 \to \alpha^2-\beta^2=5(\alpha-\beta)=0 \to (\alpha-\beta)(\underbrace{\alpha+\beta-5})=0$

$\alpha+\beta=5$
$\alpha=5-\beta$
$4\alpha=20-4\beta$

مخرج $5b^2 \to 5(5b-2)=25b-10$

صورت $20-4\beta+479b-210 \to 475b-190$

$$\frac{475b-190}{25b-10}=\frac{95}{5}=19$$

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② (2)

$\frac{3-1.5}{2}=0.75$ $\frac{3+1.5}{2}=2.25$

$3-2.25=0.75$

$-1.5+2.25=0.75$

$2\times0.75=1.5$

۲ نقطه دارد

سهمی

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③ (3)

$|x_1-x_2|=\frac{\sqrt{\Delta}}{|a|} \to \sqrt{\underbrace{4k^2-4\times5}_{4k^2-20}}=\frac{4}{3}k$

$4k^2-20=\frac{16}{9}k^2 \to 36k^2-180=16k^2 \to 20k^2=180 \to k=\pm3$

$\left[\frac{k^2}{2}\right] \to \left[\frac{9}{2}\right] \to \left[\frac{8}{2}\right]=4$

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④ (4)

رأس $\frac{3-5}{2}=-1$ $\frac{\alpha+\beta}{2}=-1 \to \alpha+\beta=-2$ $\alpha^2+\beta^2 \to (\alpha+\beta)^2-2\alpha\beta$

$5=4-2\alpha\beta \to \alpha\beta=-\frac{1}{2}$

$y=a(x-\alpha)(x-\beta)$

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

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

$0 \to y=-\frac{2}{3}(0^2+0-\frac{1}{2}) \to \frac{1}{3}$ $(0,\frac{1}{3})$

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⑤ (5)

$-x^2+5x+m=0 \to m<\frac{9}{2}$
$a<0$

$\Delta=25+4m\geq0 \to m\geq-\frac{25}{4}$

$f(\frac{9}{2}) \to -(\frac{9}{2})^2+5(\frac{9}{2})+m \to -\frac{81}{4}+\frac{90}{4}+m=\frac{9}{4}+m$ $\frac{9}{4}+m<0 \to m<-\frac{9}{4}$

$-\frac{25}{4}\leq m<-\frac{9}{4} \to -3,-4,-5,-6$

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$mx^2-12x+5m-1 \longrightarrow \frac{-b}{2a} \longrightarrow \frac{12}{2m}=2 \longrightarrow m=3$

$3x^2-12x+14 \longrightarrow f(2)=12-24+14 \longrightarrow y=2$

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$a^2=\alpha\beta$

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

ضرب ریشه ها $\longleftarrow 2a-1$

$\alpha\beta=2a-1$

$a^2=2a-1$

$a^2-2a+1=0$

$(a-1)^2=0$

$a=1$

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$x^4-7x^2-5=0 \qquad x^2=t$

$t^2-7t-5=0 \qquad t \longrightarrow \frac{7\pm\sqrt{69}}{2} \qquad x=\pm\sqrt{\frac{7+\sqrt{69}}{2}}$

$2P^2-4(0)P+2(0)=59+7\sqrt{69}$

$P=\frac{-7+\sqrt{69}}{2}$

$\hookrightarrow S=0$

$2P^2 \longrightarrow \frac{118+14\sqrt{69}}{2} \longrightarrow 59+7\sqrt{69}$

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رأس $\longrightarrow \frac{4}{2k}=\frac{2}{k}$

$y \longrightarrow \underbrace{\frac{-4}{k}-4}_{-8}$

$\frac{-4}{k}-6=\frac{-8}{k}-4 \longrightarrow \frac{4}{k}=2$

$k=2$

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$-mx^2+mx+1=-m-x \longrightarrow -mx^2+mx-m-x+1=0$

$\underbrace{-mx^2+x(m+1)+(m+1)}$

$\Delta<0$

$(m+1)^2+4m(m+1)<0$

$(m+1)(5m+1)<0$

$-1<m<\frac{-1}{5}$

هیچ عددی صحیح نیست