یکتا بلاری

مقطع: یازدهم دختر A

۱۹٫۲۵

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①

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

$3=4a$

$\boxed{\dfrac{3}{4}=a}$

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

$(6)\ \checkmark \qquad (-2)\ \times$

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② ۱٫۷۵

$f(x)=mx^2-5x+m \qquad I: m<0 \qquad I\cap II: \boxed{m<2/5}$

x		x_1		x_2	
$f(x)$	$-$	0	$+$	0	$-$

$II: \Delta>0 \rightarrow 25-4m^2>0 \rightarrow 4m^2<25 \xrightarrow{\text{جذر}} -2/5<m<2/5$

	$-2/5$	0	$2/5$

$-2/5 < m < 0$

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③

$\alpha=\dfrac{3-\sqrt5}{3} \qquad \beta=\dfrac{3+\sqrt5}{3} \rightarrow S=2 \qquad P=\dfrac{4}{9} \rightarrow x^2-2x+\dfrac{4}{9}=0$ ۱٫۵

ضرایب صحیح $\xrightarrow{\times 9}$

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④

$2x^2-8x+m+2=0 \qquad \alpha<\beta \qquad 3\alpha^2+\beta^2=12 \rightarrow \underbrace{2\alpha^2+2\beta^2}_{2(S^2-2P)}+\underbrace{\alpha^2-\beta^2}_{S\frac{\sqrt\Delta}{|a|}}=12$

$S=4 \qquad P=\dfrac{m+2}{2}$

$2S^2-4P+2\sqrt\Delta=12 \rightarrow 32-2m-4+2\sqrt{48-8m}=12 \xrightarrow{\div 2} 14-m+\sqrt{48-8m}=6$ ۲

$\sqrt{48-8m}=-8+m \xrightarrow{\text{به توان ۲}} 48-8m=m^2+64-16m$

$m^2-8m+16=0 \longrightarrow (m-4)^2=0 \ \boxed{m=4}$

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⑤

$\text{Ext}/\ _9^2 \qquad y=a(x-2)^2+9 \xrightarrow{/\,^5_0} 5=4a+9 \rightarrow a=-1$ ۲

$\boxed{y=-x^2+5+4x}$

$-x^2+4x+5>0$

$\boxed{-1,5}$

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

$(-1,5)$

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⑥

$\alpha x^2-7x+9\beta=0 \qquad \beta>0 \qquad \dfrac{1}{\alpha}+\dfrac{1}{\beta}=?$

$\alpha+\beta=\dfrac{7}{\alpha} \qquad \alpha\beta=\dfrac{9\beta}{\alpha} \rightarrow a=\pm 3$

$-\dfrac{9}{3}+\beta=-\dfrac{7}{3} \rightarrow \boxed{\beta=\dfrac{2}{3}}$

$9\left(-\dfrac{1}{3}+\dfrac{3}{2}\right)=-3+9=\dfrac{21}{2}$ ۲

(7)

$x^2 + mx - 2m = 0$ $\alpha^2 - m\beta = 8$

$\alpha^2 + m\alpha - 2m = 0$ $-m\alpha - m\beta + 2m = 8 \to -m(\alpha + \beta) + 2m = 8 \to m^2 + 2m = 8$ $\boxed{m = 2}$

$\Rightarrow (-2)$

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(8)

$f(x) = mx^2 + 4x + \frac{m}{2} + 7$

$\frac{-\Delta}{4a} = 8$

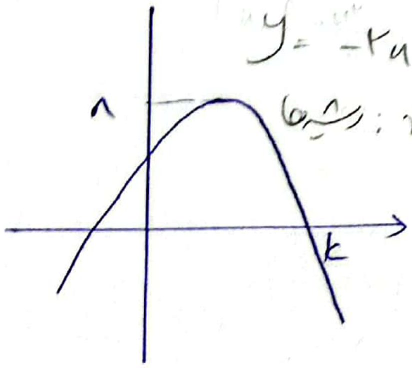
$\Delta = -32m$

$16 - 4m(\frac{m}{2} + 7) = -32m$

$16 - 2m^2 - 28m = -32m$

$0 = 2m^2 - 4m - 16 \to m^2 - 2m - 8 = 0$

$(m-4)(m+2) = 4,\ -2$



$y = -2x^2 + 4x + 6$

ریشه: $x^2 + 4x - 12 \to (x+6)(x+2)$ (3)

$k = 3$

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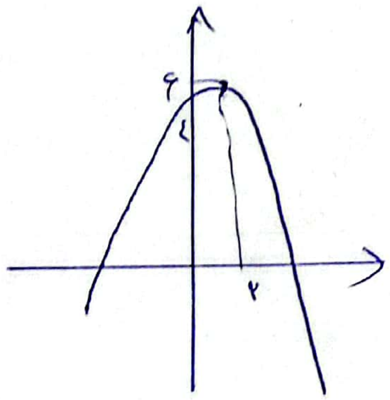
(9)



$\to y = a(x-h)^2 + k$

$y = a(x-2)^2 + 6 \to y = -\frac{1}{2}(x^2 + 4 - 4x) + 6$

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

ریشه $\Rightarrow 0 = (\frac{-x^2}{2} + 2x + 4 = 0) \times 2 \to -x^2 + 4x + 8 = 0$

$\frac{1}{\alpha} + \frac{1}{\beta} \to \frac{\beta + \alpha}{\alpha\beta} \Rightarrow \frac{-4}{8} \to \frac{-1}{2}$

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(10)

$x^2 - (4\alpha + 4)x + (3\alpha^2 + 6\alpha + 3) = 0$ $-\frac{4}{3} + \frac{12}{3}$

$x = 2 \to 4 - 8\alpha - 8 + 3\alpha^2 + 6\alpha + 3 = 0 \to 3\alpha^2 - 2\alpha - 1 = 0$

$\alpha^2 - 2\alpha - 3 \Rightarrow (\alpha - 3)(\alpha + 1)$ — $\frac{3}{3} \Rightarrow 1$, $\frac{-1}{3} = \frac{-1}{3}$

ص

$\alpha = 1 \to x^2 - 8x + 12 \Rightarrow (x-6)(x-2)$ (6) (2)

$\alpha = -\frac{1}{3} \to x^2 - \frac{8}{3}x + \frac{4}{3} \to$ ریشه $= x^2 - \frac{8}{3}x + \frac{4}{3} = 0$

$3x^2 - 8x + 4 = 0 \to x^2 - 8x + 12 \Rightarrow 0$

$(x-6)(x-2)$

$\frac{6}{3}$ $\frac{2}{3}$