نام و نام خانوادگی ...شقایق مددی... پاسخنامه تشریحی تکلیف شماره ۳.۱.۲... کلاس ...یازدهم ریاضی A...

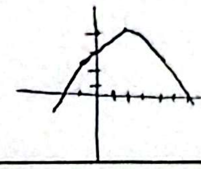
۱

$y=(a-1)x^2+x+\text{۳} \xrightarrow{a=\frac{3}{4}} -\frac{x^2}{4}+x+3=0 \quad -x^2+4x+12=0 \xrightarrow{\times(-1)} x^2-4x-12=0$

$x_S=2 \to \frac{-b}{2a}=\frac{-1}{2a-2} \to 4a-4=-1 \to a=\frac{3}{4}$ یا $(x+2)(x-6)=0 \to x=6$ یا $=-2$

$\xrightarrow[x=2]{a=\frac{3}{4}} y_S=(\frac{3}{4}-1)\times 4+2+3=4$

$a-1<0 \to$ max دارد



۲

$x_1+x_2=S=\frac{-b}{a}=\frac{5}{m}$

$P=\frac{m}{m}=1$

سهمی max دارد $\Rightarrow m<0$ I

$\Delta>0 \to 25-4m^2>0 \to 25>4m^2 \to \frac{25}{4}>m^2 \to -\frac{5}{2}<m<\frac{5}{2}$ II

$I\cap II \sim (-\frac{5}{2},0)$

۳

$S=2$

$P=\frac{9-5}{9}=\frac{4}{9}$ $\Big\} \Rightarrow y=x^2-2x+\frac{4}{9} \longrightarrow$ معادله درجه ۲ با ریشه با $\frac{3\pm\sqrt{5}}{3}$

با ضرایب صحیح

۴

$2x^2-8x+m+2=0$

$3\alpha^2+\beta^2=12 \to 2\alpha^2+(\underbrace{\alpha^2+\beta^2}_{S^2-2P})=12 \to 2\alpha^2+2\alpha\beta=-4 \to \alpha^2-\alpha\beta=-2$

$\alpha(\alpha-\beta)=-2$

$\to \alpha-\beta=\frac{-2}{\alpha}\ ,\ S=4 \to 2\alpha^2=4\alpha-2 \to 2\alpha^2-4\alpha+2 \xrightarrow{\div 2} \alpha^2-2\alpha+1=0$

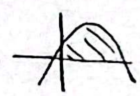
$\to(\alpha-1)^2=0 \to \alpha=1 \Rightarrow \beta=3 \Rightarrow m+2=9$

$\boxed{7}$

۵

$y=a(x-2)^2+9 \xrightarrow{(0,5)} 5=a\times 4+9 \to a=-1$

مختصات راس $(2,9)$ $\to y=-x^2-4+4x+9 \to y=-x^2+4x+5 \to$



$-x^2+4x+5>0 \xrightarrow{\times(-1)} x^2-4x-5<0 \to (x-5)(x+1)<0$

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

$\sim (-1,5)$

$\alpha x^2 - 7x + 9\beta = 0 \xrightarrow{\times \frac{1}{\alpha}} x^2 + (-\frac{7}{\alpha})x + \frac{9\beta}{\alpha} = 0 \to S = \frac{7}{\alpha}, \overset{\alpha\beta}{P} = \frac{9\beta}{\alpha}$ $\Rightarrow \alpha^2\beta = 9\beta \to \alpha^2 = 9 \to \alpha = \pm 3 \to \alpha = +3 \to 3+\beta = \frac{7}{3} \to \beta = \frac{-2}{3}$ غ ق ق $\to \alpha = -3 \to -3+\beta = \frac{-7}{3} \to \beta = 3 - \frac{7}{3} = \frac{2}{3}$ $\frac{1}{\alpha}+\frac{1}{\beta} = \frac{1}{-3}+\frac{3}{2} = \frac{-2+9}{6} = \frac{7}{6}$	۶
$\alpha^2 + m\alpha - 2m = 0$ $\beta^2 + m\beta - 2m = 0$ $\to \alpha^2 + m\alpha = \beta^2 + m\beta = 2m$ $\Rightarrow \underbrace{\alpha^2 - m\beta}_{8} = \beta^2 - m\alpha = 2m \to 2m = 8 \to m = 4$	۷
$\frac{-\Delta}{4a} = 8 \to \frac{4ac - b^2}{4a} = \frac{4m(\frac{m}{2}+7) - 16}{4m} = \frac{2m^2 + 28m - 16}{4m} = 8$ $2m^2 + 28m - 16 = 32m \to 2m^2 - 4m - 16 = 0 \to m^2 - 4m - 32 = 0 \to (m+4)(m-8) = 0$ $\to m = \frac{-4}{2} = -2 \;\Big]\; \frac{8}{2} = 4 \hookrightarrow \Delta < 0$ غ ق ق $\Rightarrow m = -2 \to -2x^2 + 4x + 6$ $k \sim$ ریشه‌ها $\to \frac{-4 \pm \sqrt{16 - 4(-2)(6)}}{\underset{-4}{2a}} = \frac{-4 \pm 8}{-4} <\begin{matrix} -1 \\ 3 \end{matrix}$	۸
$S(2,6) \to y = a(x-2)^2 + 6 \xrightarrow{(0,4)} 4 = a(-2)^2 + 6 \to a = \frac{-1}{2}$ $\to y = \frac{-1}{2}\underbrace{(x-2)^2}_{x^2+4-4x} + 6 \to -\frac{x^2}{2} + 2x \underbrace{-2+6}_{4} \xrightarrow{\times 2} -x^2 + 4x + 8$ $\Rightarrow \frac{1}{\alpha}+\frac{1}{\beta} = \frac{S}{P} = \frac{+4}{-8} = \boxed{-\frac{1}{2}}$	۹
$\xrightarrow{x=2} 4 - 8a - 8 + 3a^2 + 6a + 2 = 0 \to 3a^2 - 2a - 1 = 0 \to a^2 - 2a - 3 = 0$ $(a-3)(a+1) = 0 \to a = \frac{3}{3} = 1 \;\Big]$ یا $\boxed{\frac{-1}{3}}$ $a = 1 \to x^2 - 8x + 12 \to \Delta > 0 \to (x-2)(x-6) \sim x = 2, \boxed{6}$ ریشه دیگر $a = -\frac{1}{3} \to x^2 - \frac{8}{3}x + \frac{4}{3} = 0 \sim \Delta > 0 \xrightarrow{\times 3} 3x^2 - 8x + 4 = 0$ $x^2 - 8x + 12 \sim (3x-2)(x-2) \sim x = \boxed{\frac{2}{3}}, 2$ ریشه دیگر	۱۰