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

۱

ax^2+bx+c

$(-1,9)$

$-\frac{b}{2a}=-1 \Rightarrow b=2a$

$ax^2+2ax+c$

If $x=-1 \Rightarrow a-2a+c=9$ $\quad -a+c=9$

If $x=2 \Rightarrow 9a+6a+c=1$ $\quad 15a+c=1$

$\Big] \Rightarrow 14a=-8 \Rightarrow a=-\frac{1}{2}$ $\quad b=-1$ $\quad c=-\frac{17}{2}$

فرم کلی: $-\frac{1}{2}x^2-x-\frac{17}{2}$

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$2x^2+mx+m+6$

$S>0 \Rightarrow -\frac{m}{2}>0 \Rightarrow m<0$

$P>0 \quad \frac{m+6}{2}>0 \Rightarrow m>-6$

$\Big] \quad (-6 \;\; 0)$

۳

$2x^2+(2m-1)x+2-m$

$S=\frac{1-2m}{2}$

$\frac{1}{9}=\frac{2}{2-m}$

$\Big] = \frac{1-2m}{2} = \frac{2}{2-m}$

$4-8m-m+2m^2=9 \Rightarrow 2m^2-9m-5=0$

$m^2-9m-14=0$

$(m-7)(m+2)=0$

$m=-2 \Rightarrow \Delta<0$

$m=\frac{7}{2}$

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$x^2-x-6=0$

$S=-\frac{b}{a}=1$

$P=\frac{c}{a}=-6$

$\Big]$

$\alpha^3+\beta^3=(\alpha+\beta)(\alpha^2+\beta^2-\alpha\beta)$

$\alpha^2+\beta^2=S^2-2P=1+12=13$

$\frac{1}{\alpha}+\frac{1}{\beta}=\frac{\alpha+\beta}{\alpha\beta}=-\frac{1}{6}$

$\Big] \quad (x+\frac{1}{6})(x-13)$

$x^2-\frac{11}{6}x-\frac{13}{6}$

۵

$\left(\sqrt[3]{x^2}+\frac{1}{\sqrt[3]{x^2}}+1\right)\left(\sqrt[3]{x^2}-1\right)=2\sqrt{x}$

$\sqrt[3]{x}\left(\sqrt[3]{x}-\frac{1}{\sqrt[3]{x}}\right)$

$x-\frac{1}{x}=2 \xrightarrow{\times x} x^2-1=2x \Rightarrow x^2-2x+1=0$

$\Delta=\frac{2\pm 2\sqrt{2}}{2}=1\pm\sqrt{2}$

$\alpha+\beta=2$

$3x^2 - ax + 4$

$\alpha \cdot \beta = \frac{4}{3} \Rightarrow 3\beta^2 = \frac{4}{3} \Rightarrow \beta^2 = \frac{4}{9} \Rightarrow \beta = \pm\frac{2}{3} \quad \alpha = \pm 2$

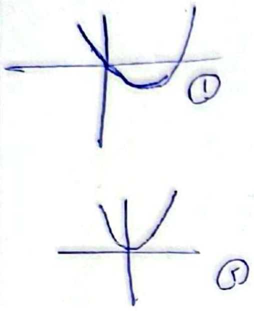
$\alpha = 3\beta$ ۶

حالت ① $= (x+\frac{2}{3})(x+2) = x^2 + \frac{8}{3}x + \frac{4}{3} \xrightarrow{\times 3} 3x^2+8x+4 \Rightarrow a=-8$

حالت ② $= (x-\frac{2}{3})(x-2) = x^2 - \frac{8}{3}x + \frac{4}{3} \to 3x^2-8x+4 \Rightarrow a=8$

$\Rightarrow a_1 + a_2 = 16$

$ax^2 + (3+2a)x \Rightarrow$ از $(x=0\ y=0)\ (0,0)$



$\Delta \geq 0 \Rightarrow (3+2a)^2 \geq 0$ ✓

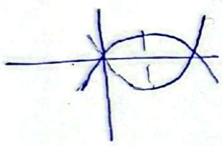
$S > 0 \Rightarrow \frac{-(3+2a)}{a} > 0$ ۷

		$-\frac{3}{2}$		0	
$P(x)$	$-$		$+$		$-$

$a \in (-\frac{3}{2}, 0)$

$y_1 = -x^2 - 2x + b \qquad y_2 = x^2 + ax - 2$

$x_S = \frac{+2}{-2} = -1 = \frac{-a}{2} \Rightarrow a = 2$



$\Rightarrow$ ریشه های دو معادله یکسان است $\Rightarrow x^2+2x-2$ ۸

$\Downarrow$

$-x^2-2x+2 = -(x^2+2x-2)$

$\Downarrow$ پس ریشه ها یکسان شد

$b = +2 \Rightarrow ab = 4$

$2ax^2 + ax - 6$ | $2x^2 - ax + b$

$S_1 = \frac{-a}{4a} = -\frac{1}{4}$

$(\alpha + 0/5)(\beta + 0/5)$

$S_2 = S_1 + 1$

$\frac{1}{4} + \alpha\beta + (\alpha+\beta)\frac{1}{2} = \alpha_1\beta_1 = \alpha_2\beta_2$, $(\alpha+\beta = -\frac{1}{4})$

$S_2 = \frac{3}{4} = \frac{a}{4} \Rightarrow a = 3$

$\Downarrow$

$\frac{-6}{2a} = \frac{b}{2}$

$6x^2 + 3x - 6 \Rightarrow \Delta = \frac{-3 \pm 3\sqrt{17}}{12} + \frac{6}{12}$, $ab = -6\ [-\frac{6}{?}]$

$x^2 + 2x - 3m \qquad x^2 + 6x + m$

ریشه ها $\alpha\ ,\ \beta$ (مشترک) $\qquad \alpha'\ ,\ \beta$ (مشترک)

$\alpha + \beta = -\frac{b}{a} = -2 \qquad \alpha' + \beta = -6$

$\alpha + \beta - (\alpha' + \beta) = \alpha - \alpha' = 4$