پارسا سمائی دهم بر A تکلیف ۲۳

(۱)

$$ext\left|\begin{array}{l} -1=\dfrac{-b}{2a} \Rightarrow 2a=b \\ 9=\dfrac{-\Delta}{4a} \Rightarrow \underbrace{-b^2}_{-4a^2}+4ac=36a \Rightarrow 4a(c-a)=\dfrac{36a}{9} \Rightarrow c=a+9 \end{array}\right.$$

$$(3,1) \Rightarrow 1=9a+6a+a+9 \Rightarrow 16a=-8 \Rightarrow a=-\frac{1}{2},\ b=-1,\ c=\frac{17}{2}$$

$$\boxed{y=-\frac{1}{2}x^2-x+\frac{17}{2}}$$

$$y=a(x+1)^2+9$$

$$(3,1) \Rightarrow 1=a(4)^2+9 \Rightarrow a=-\frac{1}{2}$$

$$y=-\frac{1}{2}(x+1)^2+9=-\frac{1}{2}x^2-x+\frac{17}{2}$$

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(۲)

$$2x^2+mx+m+6=0$$

$a>0$	$\Delta>0$	$S>0$	$P>0$
$2>0$	$m^2-8m-48>0$	$-\frac{m}{4}>0$	$\frac{m+6}{2}>0$
	$(m-12)(m+4)>0$	$\frac{m}{4}<0$	$m+6>0$
	$-4 \quad 12$ / $+ \ \vert \ - \ \vert \ +$	$m<0$	$m>-6$
	$m>12,\ m<-4$		

$$\boxed{m\in(-6,-4)}$$

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(۳)

$$3x^2+(2m-1)x+2-m=0 \qquad -\frac{b}{a}=\frac{1}{\frac{c}{a}} \Rightarrow -\frac{b}{a}=\frac{a}{c} \Rightarrow a^2=-bc \Rightarrow 9=(2m-1)(m-2)$$

$$\Rightarrow 9=2m^2-5m+2 \Rightarrow 2m^2-5m-7=0 \Rightarrow m^2-5m-14=0 \Rightarrow (m-7)(m+2)=0 \Rightarrow m \to \frac{7}{2}\ \checkmark$$

$$\to -1\ \times \quad \Delta<0$$

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(۴)

$$x=x^2-4 \Rightarrow x^2-x-4=0 \qquad S=1 \quad P=-4$$

$$S=x_2^3+x_1^3+\frac{1}{x_1}+\frac{1}{x_2}=\underbrace{(x_2+x_1)}_{1}(\underbrace{x_2^2+x_1^2}_{S^2-2P}\underbrace{-x_2x_1}_{+4})+\frac{\overbrace{x_2+x_1}^{1}}{\underbrace{x_1x_2}_{-4}}=13-\frac{1}{4}=\frac{51}{4}$$

$$P=\left(x_2^3+\frac{1}{x_1}\right)\left(x_1^3+\frac{1}{x_2}\right)=\underbrace{(x_1x_2)^3}_{-4}+\underbrace{x_2^2+x_1^2}_{9}+\frac{1}{\underbrace{x_1x_2}_{-4}}=-64+9-\frac{1}{4}=-\frac{221}{4}$$

$$x^2-S+P=0 \Rightarrow x^2-\frac{51}{4}-\frac{221}{4}=0 \Rightarrow \boxed{4x^2-51-221=0}$$

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(۵)

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

$$\Rightarrow t^3-1=2\sqrt{t^2} \Rightarrow x^2-1=2x \Rightarrow x^2-2x-1=0 \Rightarrow S=-\frac{-2}{1}=\boxed{2}$$

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(۶)

$$3x^2-ax+4=0 \qquad \alpha,\ 3\alpha \qquad S=4\alpha=\frac{a}{3} \qquad P=\frac{4}{3}=3\alpha^2 \Rightarrow 9\alpha^2=4 \qquad |3\alpha|=2$$

$$\alpha=\frac{2}{3} \qquad \alpha=-\frac{2}{3}$$

$$12\alpha=a \to 12\times\frac{2}{3}=8=a_1$$

$$\to 12\times-\frac{2}{3}=-8=a_2 \qquad 8-(-8)=\boxed{16}$$

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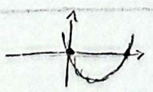
(۷)

$$y=ax^2+(3+2a)x+$$



حالت تک نقطه $\quad c=0\ ,\ 3+2a>0 \Leftarrow a>0$

$$a<-\frac{3}{2} \Leftarrow 3+2a<0 \Leftarrow \frac{-(3+2a)}{a}>0 \Leftarrow -\frac{b}{a}>0 \Leftarrow S>0$$

هیچ مقدار

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(۸)

$$y=x^2+ax-2 \qquad \frac{-b}{2a} \Rightarrow \frac{-a}{2}=\frac{2}{-2} \Rightarrow a=2 \qquad 1=x^2+2x-2 \Rightarrow x^2+2x-3=0 \Rightarrow (x-1)(x+3)=0$$

$$x=1,\ x=-3$$

$$y=-x^2-2x+b \qquad \Rightarrow -1(x-1)(x+3)+1=-x^2-2x+b \Rightarrow b=4 \qquad \boxed{ab=2\times4=8}$$

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(۹)

$$2x^2-ax+b=0 \qquad \alpha+\frac{1}{2},\ \beta+\frac{1}{2} \qquad S_2=\alpha+\frac{1}{2}+\beta+\frac{1}{2}=\underbrace{\alpha+\beta}_{-\frac{1}{2}}+1=\frac{a}{2} \Rightarrow a=-1$$

$$P_2=\left(\alpha+\frac{1}{2}\right)\left(\beta+\frac{1}{2}\right)=\underbrace{\alpha\beta}_{3}+\frac{\overbrace{\alpha+\beta}^{-\frac{1}{2}}}{2}+\frac{1}{4}=\frac{b}{2}$$

$$2ax^2+ax-6=0 \qquad \alpha,\beta \qquad S_1=\alpha+\beta=-\frac{a}{2a}=-\frac{1}{2} \qquad P_1=\alpha\beta=\frac{-6}{-2}=3$$

$$3=\frac{b}{2} \Rightarrow b=6 \qquad \boxed{\left[\frac{ab}{4}\right]=\left[\frac{-6}{4}\right]=-2}$$

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(۱۰)

$$\left.\begin{array}{l} x^2+6x+m=0 \Rightarrow S=\alpha+\beta=-6 \\ x^2+2x-3m=0 \Rightarrow S=\alpha+\beta'=-2 \end{array}\right\} -\alpha-\beta+\alpha+\beta'=6-2=\boxed{4}$$