۱- ۱۸

$x=-1 \Rightarrow a-b+c=9$ $\quad x=3 \Rightarrow 9a+3b+c=1$ $\quad \frac{b}{a}=-1 \Rightarrow b=2a$

$8a+8a=-8 \Rightarrow a=-\frac{1}{2}\,,\ b=-1 \Rightarrow a+b+c=9$

$\Rightarrow -\frac{1}{2}+1+c=9 \Rightarrow c=\frac{17}{2} \Rightarrow \frac{-x^2}{2}-x+\frac{17}{2}=0$ ✓ (۲)

ایلیا پدرام

۲- β پوچ (۱)

$\Delta>0 \Rightarrow m^2-4(2)(m+6)>0 \Rightarrow m^2-8m-48>0$

$\Rightarrow (m-12)(m+4)>0$ $\quad \begin{matrix} -4 & & 12 \\ + & - & + \end{matrix} \Rightarrow (-\infty,-4)\cup(12,+\infty)$ (جواب پایین صفحه)

۳- $\alpha+\beta=\frac{1}{\alpha\cdot\beta} \Rightarrow \frac{-b}{a}=\frac{1}{\frac{c}{a}} \Rightarrow \frac{-b}{a}=\frac{a}{c}$

$\Rightarrow \frac{-2m+1}{3}=\frac{3}{2-m} \Rightarrow -2m^2-5m+2=9 \Rightarrow 2m-5m-7=0$ (۲)

$\Rightarrow m^2-m5-14=0 \Rightarrow (m-7)(m+2) \Rightarrow m=\frac{7}{2}=3{,}5$ ق ق, $m=-1$ ✓

۴- $x_1+x_2=1\,,\ x_1x_2=-4$ $\quad x_1^2+\frac{1}{x_2}=A$ $\quad x_2^2+\frac{1}{x_1}=\beta$

$\Rightarrow A+\beta=\frac{1}{x_2}+\frac{1}{x_1}+x_2^2+x_1^2 \Rightarrow \frac{x_2+x_1}{x_2x_1}-x_1^2+x_2^2=13-\frac{1}{4}=\frac{51}{4}$

$AB=\left(\frac{1}{x_2}+x_1^2\right)\left(\frac{1}{x_1}+x_2^2\right)=x_1^2x_2^2 \Rightarrow \frac{x_2+x_1}{x_2x_1}=-64 \Rightarrow$

$x_1^2+x_2^2=(x_1+x_2)^2-2x_1x_2=1-(-8)=9$ (۲)

$\Rightarrow AB=\frac{1}{4}-9-64=\frac{-291}{4} \Rightarrow -4x^2+51x+291$ ✓

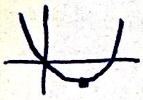
۵- $\frac{\left(\sqrt[3]{x^4}+\sqrt[3]{x^2}+1\right)\left(\sqrt[3]{x^2}-1\right)}{\sqrt[3]{x^2}}=2\sqrt[3]{x} \Rightarrow x^2-1=2x \Rightarrow x^2-2x-1=0$ (۲)

$\Rightarrow S=\frac{-b}{a}=\frac{-(-2)}{1}=2$ ✓

۶- $P=\alpha\cdot 2\alpha=2\alpha^2=\frac{4}{2} \Rightarrow \alpha=\pm\frac{2}{2}$ (۲)

$S=\alpha+2\alpha \Rightarrow 3\alpha=\frac{a}{2} \Rightarrow \frac{\pm 8}{2}=\frac{a}{2} \Rightarrow a=\pm 8 \Rightarrow$ اختلاف $=16$ ✓

۷- [illegible]

$c=0 \Rightarrow$  $a>0$ ✓ (۲)

[redacted]

$\frac{-b}{a}\geq 0 \Rightarrow \frac{-3-2a}{2a}\geq 0 \Rightarrow$ $\begin{matrix} -\frac{3}{2} & 0 \\ - \ + & - \end{matrix} \Rightarrow a\in\left[-\frac{3}{2},0\right)$

-۸ (1)

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

دو برابر $\Rightarrow 4+8 = 4-4(-1)(b) \Rightarrow 12 = 4+4b \Rightarrow b = 2$

$a \times b = 2 \times 2 = 4$

(جواب پایین صفحه)

-۹

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

$\frac{-6}{2a} = \frac{-6}{2} = -3 \Rightarrow \frac{b}{2} = -3 \Rightarrow b = -6$ (4)

$\frac{ab}{4} = \frac{-6}{4} = \left[\frac{-6}{4}\right] = -2$ ✓

-۱۰

رئوس $Z, P \rightarrow x^2+6x+m$

$K, P \rightarrow x^2+2x-3m$

$S_A = P+Z$

$S_B = K+P \Rightarrow S_A - S_B = Z-K$

$S_A = -6,\ S_B = -2 \} \Rightarrow Z-K = -2-(-6) = +4$ ✓ (4)

سوال ۲

$\Delta>0 \rightarrow$ (-4, 12: $+ \mid - \mid +$) (I)

$S>0 \rightarrow \frac{-b}{a}>0 \rightarrow -m>0 \rightarrow m<0$ (II)

$P>0 \rightarrow \frac{m+6}{2}>0 \rightarrow m>-6$ (III)

$I \cap II \cap III \rightarrow -6<m<-4$

سوال ۹

$\begin{cases} y = x^2+2x-2 \\ y = 1 \end{cases} \rightarrow x^2+2x-3=0 \rightarrow (x+3)(x-1)=0$

$\begin{cases} x=1 \rightarrow A(1,1) \\ x=-3 \rightarrow B(-3,1) \end{cases} \rightarrow 1 = -9+6+b \rightarrow b=4$

$a=2$

$ab = 8$