آرا مهادی

(۱ $\frac{-b}{2a}=1$, $a-b+c=9$, $9a+3b+c=1 \Rightarrow a=\frac{-1}{2}$ و $b=-1$ و $c=\frac{17}{2} \to y=\frac{-1}{2}x^2-x+\frac{17}{2}$

(۲ $m^2-8m-48>0 \to (m-12)(m+4)>0 \to$ (-4 , 12 : $+ | - | +$) $\to (-\infty,-4)\cup(12,+\infty)$

(۳ $\frac{1-2m}{6}=\frac{3}{2-m} \to 2m^2-5m-16=0 \to m=\frac{5\pm\sqrt{153}}{4}$

(۴ $2^3+\frac{1}{(-2)^3}$, $-2^3+\frac{1}{2^3} \to (x-2^3+\frac{1}{2^3})(x-\frac{1}{2^3}+2^3)=x^2+0+(-2^6+2-\frac{1}{64})$

$y=x^2-62\frac{1}{64}$

(۵ $t=\sqrt[6]{x}$

$(t^2+\frac{1}{t^2}+1)(t^2-1)=2t \to t^3-\frac{1}{t^3}=2t \to t^6-1=2t^3 \xrightarrow{t^3=z}$

$z^2-2z-1=0 \Rightarrow z=x=1\pm\sqrt{2} \Rightarrow x_1+x_2=2$

(۶ $\frac{4}{3}=\alpha\beta \to \frac{4}{3}=\frac{1}{3}\alpha^2 \to \alpha=\pm2$ و $\beta=\pm\frac{2}{3}$ $\xrightarrow{\text{هم علامت}}$ $\frac{a}{6}=\frac{8}{3}$ و $\frac{a}{6}=\frac{-8}{3} \to a=\pm16$

(۷ $\Delta<0$, $a>0 \to 4a^2+12a+9<0 \to (a-\frac{12}{8})^2<0$ $\xrightarrow{\text{بدون مقدار (همواره + مثبت شود)}}$ به ازای هیچ مقدار

(۸ $\frac{-a}{2}=\frac{2}{-2} \Rightarrow a=2$ $\Rightarrow ab=4$

رئوس منطبق $\to x^2+2x-2=-x^2-2x+b \to b=2$

(۹ $r_1+r_2=\frac{-1}{2}$ و $r_1r_2=\frac{-3}{a}$ $\to$ ~~r_1+r_2+1~~ ($\frac{-3}{a}$) $=\frac{a}{2} \to a=1$

$r_1r_2+\frac{1}{2}(r_1+r_2)+\frac{1}{4}=-3-\frac{1}{4}+\frac{1}{4}=-3 \to \frac{b}{2}=-3 \to b=-6$ $\to [\frac{-6}{4}]=-2$

(۱۰ $4x+4m=0 \to x=-m \to (-m)^2+6(-m)+m=0 \Rightarrow m(m-5)=0$

$m=0$ ✗ $\to x^2+6x+5=0 \to$ $\boxed{-1}$, -5

$m=5$ $\to x^2+4x-5=0 \to$ $\boxed{3}$, -5 $\longrightarrow 3-(-1)=4$