الیا منیربانی

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① $y=a(x+1)^2+9 \longrightarrow a(3+1)^2+9=1 \rightarrow a=-\frac{1}{2}$

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

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② $S=\frac{-b}{a}=-\frac{m}{2}>0 \longrightarrow \boxed{m<0}$ $\quad P>0 \Rightarrow \frac{m+9}{2}>0$

$\rightarrow \boxed{m>-9}$

$\Delta>0 \Rightarrow m^2-8m-48>0$

	-4		12	
$+$		$-$		$+$

$\boxed{m<-4}$ $\quad m>12$ ✗ $\longrightarrow$ $\boxed{-9<m<-4}$

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③ $S=\frac{1}{P}$ $\quad S=-\frac{3m+1}{3}$ $\quad P=-\frac{2-m}{3}$

$\rightarrow 9=3m^2+2-5m \longrightarrow m=-1 \longrightarrow$ ✗ $\Delta<0$

$\Delta>0$ $\quad \boxed{m=\frac{7}{3}}$

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④ $x^2-x-4=0$ $\quad S=1$ $\quad P=-4$ $\quad$ معادله جدید $=x^2-Sx+P$

$S_{جدید}=x_1^3+x_2^3+\frac{x_1+x_2}{x_1x_2}=S^3-3SP+\frac{S}{P}=\frac{51}{4}$

$P_{جدید}=(x_1x_2)^3+x_2^3+x_1^3+\frac{1}{x_1x_2}=P^3+S^3-3SP+\frac{1}{P}=-\frac{221}{4}$

$\rightarrow x^2-\frac{51}{4}x+\frac{221}{4}=0$

(۵)

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

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

$$\rightarrow x^2-1=2x \rightarrow x^2-2x-1=0$$

$$\Delta=4(-1)=8>0 \rightarrow x_1+x_2=-\frac{-2}{1}=2$$

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(۶) $\alpha\times\frac{4}{3}=\frac{4}{3}\rightarrow\alpha=\pm2$ $\quad a=2 \quad 12-2a+4$

$a=8$

$\alpha=-2\rightarrow 12+2a+4\rightarrow a=-8$

$8+1=9$

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(۷) $a>0$

$$\frac{-3+2a}{a}<0 \rightarrow 2a<-6\rightarrow a<-\frac{3}{2}\Big\}\rightarrow\emptyset$$

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(۸) $-\frac{b}{2a}=\frac{2}{-2}=\frac{-\alpha}{3}\rightarrow\boxed{\alpha=2}$ $\quad y=x^2+2x-3=0$

$\rightarrow x=1$

$x=-3$

$y=-(x-1)(x+3)+1=-x^2-2x+4$ $\boxed{b=4}$ $\quad 4\times2=8$

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(۹) $\alpha=\alpha'+\frac{1}{2}$ $\quad 2(\alpha'+\frac{1}{2})^2-a(\alpha'+\frac{1}{2})+b=$

$2ax^2+ax-9$ $\rightarrow 2\alpha'^2+(2-a)\alpha'+\frac{1}{2}-\frac{a}{2}+b=$

$2ax^2+ax-9$ $\quad 2a=2 \quad a=1\rightarrow b=-9$

$\frac{}{}$

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

(b) $x^2 + 4x + m = x^2 + 2x - 2m \rightarrow n = 5m$

$(-m)^2 + 4(-m) + m = 0 \rightarrow m(m-5) = 0$

$m = 0$ ✗ , $m = 5$

$x^2 + 4x + 5 = 0$

$-1 \quad -5$

$x^2 + 2x - 15 = 0 \rightarrow 2 + 1 = 3$

$-5 \quad 3$