

کیمیاء عناصری - دوم ذریعہ C - تالیف ۲۳

$$\textcircled{1} \quad x = \frac{-b}{ra} \xrightarrow{x=-1} -1 = -\frac{b}{ra} \rightarrow b = ra$$

$$\xrightarrow{y=9, x=1} 9 = a - b + c \rightsquigarrow 9 = a - (ra) + c \rightarrow -a + c = 9 \rightarrow c = a + 9$$

$$\xrightarrow{y=1, x=2} 1 = 9a + 2b + c \quad b=ra, c=a+9 \quad 1 = 9a + 2ra + a + 9$$

$$18a = -8 \rightarrow a = -\frac{1}{2}$$

$$b = r \times -\frac{1}{2} = -1 \quad c = -\frac{1}{2} + 9 = \frac{17}{2}$$

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

$$\textcircled{2} \quad rx^2 + mx + \frac{c}{m+4} = 0 \rightarrow \Delta > 0$$

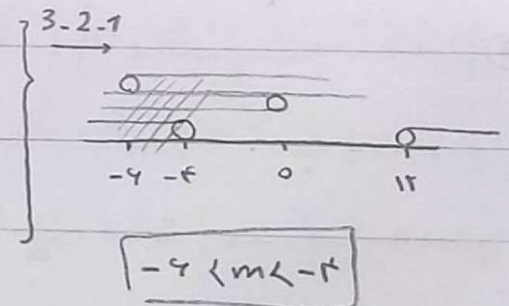
$$\begin{array}{c|cc} & -r & 1r \\ \hline + & - & + \end{array} \rightarrow m > 1r \text{ or } m < -r$$

$$m^2 - 4m - 4 > 0 \rightarrow \frac{(m-1r)(m+4)}{1r \quad -r} > 0$$

$$P \rightarrow \frac{c}{a} > 0 \rightarrow \frac{m+4}{r} > 0$$

$$m+4 > 0 \rightarrow m > -4 \quad \textcircled{2}$$

$$\frac{-b}{a} > 0 \rightarrow \frac{-m}{r} > 0 \rightarrow -m > 0 \rightarrow m < 0 \quad \textcircled{3}$$



$$\textcircled{3} \quad \Delta > 0$$

$$\frac{-b}{a} = \frac{a}{c} \rightarrow \frac{-rm+1}{r} = \frac{r}{r-m} \rightsquigarrow (r-m)(-rm+1) = 9$$

$$-rm+1+rm^2-m=9 \rightarrow rm^2-am-10=0$$

$$rm^2-am-10=0 \rightarrow m^2-am-10=0 \rightsquigarrow (m+2)(m-5) \rightarrow m = -2 \text{ or } 5$$

$$\star \xrightarrow{m=-1} 3x^2 - 2x + 3 = 9 - (34) < 0 \quad \text{غلط}$$

$$m = \frac{+10}{r}$$

m نقطہ ہوازی $\frac{+10}{r}$ قابل قبول و مقدار Δ مثبت است (درستی چنی)



Senobar

$$\textcircled{1} \quad x_1^r + x_1^r + \frac{1}{x_1} + \frac{1}{x_1}$$

$$\frac{(x_1^r + x_1^r)(x_1^r - x_1^r + x_1^r)}{1 \cdot 9 - (-r) \cdot 1r} + \frac{x_1^r + x_1^r}{x_1^r x_1^r} \rightarrow 1r + \frac{1}{-r} \rightarrow \frac{9r-1}{r} = \frac{91}{r} \quad (\text{نفسه})$$

$$x_1 \cdot x_1 = \frac{c}{a} = -r$$

$$x_1 + x_1 = \frac{-b}{a} = 1 \rightarrow (x_1 + x_1)^r = 1 \rightarrow x_1^r + x_1^r + \frac{-1}{x_1^r x_1^r} = 1 \rightarrow x_1^r + x_1^r = 9$$

$$(x_1^r + \frac{1}{x_1^r})(x_1^r + \frac{1}{x_1^r}) = x_1^r x_1^r + \frac{x_1^r}{1} + \frac{x_1^r}{x_1^r} + \frac{1}{x_1^r} \rightarrow -4r + 9 - \frac{1}{r} = \frac{-4r1}{r}$$

$$x^r - 5x + p = 0 \rightarrow x^r - \frac{91}{r}x - \frac{4r1}{r} = 0$$

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

$$x^r - rx - 1 = 0 \rightarrow S = \frac{-b}{a} = \frac{r}{1} = r$$

$$\textcircled{3} \quad \frac{-b}{a} = \frac{a}{r}, \frac{c}{a} = \frac{r}{r}$$

$$x_1 = rx_1 \rightarrow x_1 + x_1 = rx_1 = \frac{a}{r} \rightarrow x_1 = \frac{a}{r}$$

$$\frac{a}{r} \times \frac{a}{r} = \frac{a^r}{r^2} = \frac{r}{r} \rightarrow a^r = 4r, a = \pm 1 \rightarrow 1 - (-1) = 14$$

⑤ $\rightarrow a > 0$ ①

$$\frac{-b}{a} \geq 0 \rightarrow \frac{-r-ra}{a} \geq 0 \rightarrow -r-ra \geq 0 \rightarrow -r \geq ra$$

$\rightarrow$ اشتراك این رتی نیست $\rightarrow \textcircled{1} \cap \textcircled{2} = \emptyset$ $\frac{-r}{r} \geq a$ ②

⑦ $y = -x^r - rx + b \rightarrow x = \frac{-b}{ra} \rightarrow \frac{r}{-r} = -1$

$y = x^r + ax - r \rightarrow x = \frac{-a}{r} = -1 \rightarrow -a = -r \rightarrow a = r$

$y = \frac{-\Delta}{ra} \rightarrow \frac{-(r+rb)}{ra} = \frac{r+rb}{r} \rightarrow 1+b \rightarrow b = r$

$y = \frac{-\Delta}{ra} = \frac{-(a+1)}{r} \rightarrow \frac{-r}{r} = -r$

$a \cdot b \rightarrow r \times r = \Delta$

④ ① $rx^r - ax + b = 0 \rightarrow \beta, \alpha$ رتی

② $rax^r + ax - r = 0 \rightarrow$ رتی $\Rightarrow \alpha' = \alpha + \frac{1}{r} \quad \beta' = \beta + \frac{1}{r}$

③ $\begin{cases} S = \frac{-b}{a} \rightarrow \frac{-a}{ra} = -\frac{r}{r} = -\frac{1}{r} \\ P = \frac{c}{a} \rightarrow \frac{-r}{ra} = -\frac{r}{r} = -\frac{r}{r} \end{cases} \quad \begin{cases} S = \frac{-1}{\alpha + \frac{1}{r}} + \frac{1}{\beta + \frac{1}{r}} = -\frac{1}{r} + 1 = \frac{1}{r} \\ (\alpha + \frac{1}{r})(\beta + \frac{1}{r}) = -\frac{r}{r} = -\frac{b}{r} \rightarrow b = -r \end{cases}$

$\left[\frac{a \cdot b}{r} \right] \rightarrow \left[\frac{rx - r}{rx} \right] = \left[-\frac{r}{r} \right] = -r$

⑩ $\begin{cases} x^r + 4x + m = 0 \\ x^r + rx - rm = 0 \end{cases} \xrightarrow{x=t} \begin{cases} t^r + 4t + m = 0 \rightarrow m = -t^r - 4t \\ t^r + rt - rm = 0 \rightarrow t^r + rt + r(-t^r - 4t) = 0 \end{cases}$

$t^r + rt + r(-t^r - 4t) = 0 \rightarrow t^r + rt - rt^r - 4rt = 0 \rightarrow t^r(1-r) + r(1-4t) = 0$

$x=t \rightarrow rx - r + m = 0 \rightarrow m = r$

Senobar $\begin{cases} x^r + 4x + \omega = 0 \rightarrow (x+1)(x+\omega) \\ x^r + rx - 1\omega = 0 \rightarrow \frac{(x-r)}{r}(x+\omega) \end{cases} \rightarrow r - (-1) = r$