/ /   مونا عباسی

$x^2 - 5x + 2 = 0 \qquad S = \frac{-(-5)}{1} = 5 \qquad P = \frac{2}{1} = 2 = \alpha\beta$ ۱

$\beta = \frac{2}{\alpha}$

$\frac{4\alpha + \beta^5}{5\beta^2} = \frac{4\alpha}{5\beta^2} + \frac{\beta^3}{5} = \frac{4\alpha}{\frac{20}{\alpha^2}} + \frac{\beta^3}{5} = \frac{\alpha^3 + \beta^3}{5} = \frac{(\alpha+\beta)^3 - 3\alpha\beta(\alpha+\beta)}{5}$

$= \frac{5^3 - (3 \times 2 \times 5)}{5} = \frac{95}{5} = 19$

۲

$-4 = 9a + 3b + c \qquad b = -1.5a \rightarrow S = \frac{-b}{a} = \frac{-(-1.5a)}{a} = 1.5$

$-4 = 2.25a - 1.5b + c$

$|\alpha - \beta| = \frac{\sqrt{\Delta}}{|a|} = \frac{\sqrt{4k^2 - 4 \times 5 \times 1}}{1} = \frac{4}{3}k \qquad 2\sqrt{k^2 - 5} = \frac{4}{3}k$ ۳

$3\sqrt{k^2 - 5} = 2k \qquad 9k^2 - 45 = 4k^2 \qquad 5k^2 = 45 \qquad k^2 = 9 \qquad [\frac{9}{2}] = [4.5] = 4$

$\frac{-b}{2a} = \frac{-5+3}{2} \rightarrow \frac{-b}{a} = S = -2 \qquad S_{\text{(رأس)}}(-1, 1)$ ۴

$\alpha^2 + \beta^2 = 5 \qquad (-2)^2 - 2P = 5 \qquad P = -\frac{1}{2} \rightarrow y = a(x^2 + 2x - \frac{1}{2})$

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

$y = -\frac{2}{3}(0 + 0 - \frac{1}{2}) = \frac{1}{3}$

① $x = \frac{-5 \pm \sqrt{25 + 4m}}{-2} \rightarrow \frac{-5 \pm \sqrt{25 + 4m}}{-2} < \frac{9}{2}$ ۵

$+5 + \sqrt{25 + 4m} < 9 \rightarrow \sqrt{25 + 4m} < 4 \qquad 25 + 4m < 16 \qquad m < -\frac{9}{4}$

② $\Delta > 0 \qquad 25 + 4m > 0 \qquad \frac{-25}{4} < m \qquad \frac{-25}{4} < m < \frac{-9}{4}$ $\quad -3 \quad -4 \quad -5 \quad -6$ ، شمار ۴

$y_{min} = 2 = \frac{-(144 - 20m^2 + 4m)}{4m} = \frac{5m^2 - m - 36}{m} \rightarrow 5m^2 - 3m - 36 = 0$ ۶

$(5m + 12)(m - 3) = 0 \qquad m = 3 \qquad m = -\frac{12}{5} \times \qquad m > 0$

$\xrightarrow{m=3} y = 3x^2 - 12x + 14 \qquad \frac{-b}{2a} = \frac{12}{6} = 2 \qquad x = 2$

۷- α و β $\quad \alpha^2+\alpha\beta=P \quad 2\alpha-1, \alpha \quad \alpha^2-2\alpha+1=0$

$\times 9 \quad \times 9 \qquad (\alpha-1)^2=0 \Rightarrow \boxed{\alpha=1}$

۸- $x^4-2x^2-8=0 \quad t^2-2t-8=0 \quad t=\frac{2\pm\sqrt{36}}{2} \quad ① \frac{2+\sqrt{36}}{2} \quad ② \frac{2-\sqrt{36}}{2}$

$x^2=\frac{2+\sqrt{36}}{2} \qquad x^2-\left(\frac{2+\sqrt{36}}{2}\right)=0$

$\delta=0 \quad P=-\left(\frac{2+\sqrt{36}}{2}\right) \qquad 2P^2-2SP+2S=2\left(\frac{2+\sqrt{36}}{4}\right)^2-0+0=\frac{4+36+12\sqrt{36}}{2}$

$=22+2\sqrt{36}$

۹- $y=kx^2-4x-9 \quad S=\left|\frac{2}{k}\right. \qquad \frac{-(12+24k)}{4k}=\frac{-4-9k}{k}$

$y=-4x-4 \quad -4\left(\frac{2}{k}\right)-4=\frac{-4-9k}{k} \quad \frac{-8-4k}{k}=\frac{-4-9k}{k} \quad \frac{-4+2k}{k}=0 \quad k=2$

$\frac{-4-9k}{k}=\frac{-4-9(2)}{2}=-11$

۱۰- $\begin{cases} y=-mx^2+mx+1 \\ y=-m-x \end{cases} \quad -mx^2+mx+1=-m-x \quad mx^2+(-m-1)x-m-1=0$

$\Delta<0 \quad (m+1)^2+4m(m+1)<0 \quad (m+1)(m+1+4m)<0 \quad (m+1)(5m+1)<0$

$m=-1 \quad m=-\frac{1}{5}$

$-1 \quad -\frac{1}{5}$

$+ \mid - \mid +$ $\qquad m\in(-1,-\frac{1}{5})$ بیشترین عدد صحیح ندارد