پاسخنامه تکلیف شماره ۲۲ — حلیا عامری — دهم ریاضی A

۱) $x^2-5x+2=0 \qquad P=2 ,\ S=5 \qquad \beta^2-5\beta+2=0 \qquad \beta^2=5\beta-2$

صورت کسر $\rightarrow 4\alpha+\beta^5$ ، مخرج $\rightarrow 5\beta^2=5(5\beta-2)=25\beta-10$

$\beta^3=\beta.\beta^2 \rightarrow \beta(5\beta-2)=5\beta^2-2\beta$

$\beta^4=\beta.\beta^3 \rightarrow \beta(23\beta-10)=23\beta^2-10\beta \xrightarrow{\beta^2\ \text{جایگذاری}} \beta^4=23(5\beta-2)-10=105\beta-46$

$\beta^5=\beta.\beta^4 \rightarrow \beta(105\beta-46)=105\beta^2-46\beta \xrightarrow{\text{جایگذاری}} \beta^5=105(5\beta-2)-46=479\beta-210$

$\Rightarrow 20-4\beta+479\beta-210=475\beta-190 \rightarrow \dfrac{475\beta-190}{25\beta-10}=\dfrac{5(19(5\beta-2))}{5(5\beta-2)}=19$

۲) $x=\dfrac{3-\frac{1}{5}}{2}=\dfrac{14/5}{2}=\dfrac{7}{5} \qquad \dfrac{-b}{2a}=\dfrac{7}{5} \Rightarrow \dfrac{b}{a}=\dfrac{-14}{5}$

$\dfrac{-b}{a}=\dfrac{14}{5} \Rightarrow \alpha+\beta=\dfrac{14}{5}=2/8$

۳) $\dfrac{\sqrt{\Delta}}{|a|}=\dfrac{\sqrt{4k^2-20}}{1}=\dfrac{4}{3}k \rightarrow \sqrt{4(k^2-5)}=\dfrac{4}{3}k \rightarrow 2\sqrt{k^2-5}=\dfrac{4}{3}k$

$\Rightarrow \sqrt{k^2-5}=\dfrac{2}{3}k \rightarrow k^2-5=\dfrac{4}{9}k^2 \rightarrow 5k^2=45 \qquad k^2=9 ,\ \left[\dfrac{k^2}{2}\right]=\left[\dfrac{9}{2}\right]=4$

$y = a(x-h)^2 + k \rightarrow y = a(-2-h)^2 + 1 \Rightarrow 4a + 1 - 4h + k^2$,f
$y = a(2-h)^2 + 1 \rightarrow 9 - 4h + k^2$ $\Big\}$ $-14h = 14$ $\boxed{h=-1}$ ج)تمرین

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

$\alpha < 0 \rightarrow \alpha = -1 - \frac{1}{\sqrt{-a}}$; $\beta = -1 + \frac{1}{\sqrt{-a}} \rightarrow (\alpha+\beta)^2 - 4\alpha\beta = 4$ $\frac{\overbrace{\alpha+\beta}^{-2}}{2} = -1$

$(-2)^2 - 4\alpha\beta = 4 \rightarrow 0 = a(x^2 + 2x + 1) + 1 \rightarrow ax^2 + 2ax + (a+1) = 0$
$\underbrace{\alpha\beta}_{-\frac{1}{2}}$

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

$\alpha + \beta = \frac{-b}{a} = 4$ $\alpha\beta = P = -m$ $x_{\text{رأس}} = \frac{-b}{2a} = \frac{-4}{-2} = \frac{4}{2} < \frac{9}{2}$ -d

$\rightarrow \left(-\frac{9}{2}\right)^2 + 4\left(\frac{9}{2}\right) + m \rightarrow \Delta > 0 \rightarrow 24 - 4(-1)(m) = 24 + 4m > 0$ $4m > -24$ $m > \frac{-24}{4}$ ①
$\hookrightarrow f\left(\frac{9}{2}\right) < 0 \rightarrow \frac{-81}{4} + \frac{36}{2} + m < 0 \rightarrow \frac{9}{4} + m < 0$ ② $\frac{9}{4} > m$ ① ∩ ② $= \frac{-24}{4} < m < \frac{-9}{4}$

$-9, -8, -7, -6, -5$

ب) $\frac{-b}{2a} = \frac{12}{2m} = \frac{9}{m}$
$\frac{-\Delta}{4a} = \frac{-4q}{m} + 4m - 1 - 4 \rightarrow 4m^2 - 4m - 4q = 0$ $\Delta = b^2 - 4ac \rightarrow (-4)^2 - 4(4)(-4q)$
$= 9 + 720 = 729$

$x = \frac{4 \pm 27}{10} \rightarrow x_1 = 4 \rightarrow x = \frac{9}{m} \rightarrow \frac{9}{4} = 2$ ⑤
$x_2 = -\frac{11}{4}$

$x^2 + 2(a+1)x + 2a - 1 = 0$ $\frac{a}{\alpha} = \frac{\beta}{a} \rightarrow a^2 = \beta\cdot\alpha$ $\alpha + \beta = -2(a+1)$ ۷
$\alpha\beta = 2a - 1$

$\alpha^2 = \alpha\beta = 2a - 1 \rightarrow a^2 - 2a + 1 = 0 \rightarrow \underbrace{(a-1)^2}_{1} = 0 \rightarrow a = 1$

$x^2 = t \rightarrow t^2 - 7t + 4 = 0$ $t = \frac{7 \pm \sqrt{49}}{2}$ $2P^2 - 4P + 15$
$= 2(-5)^2 - 4(-)(-5) + 2(-) = 50$ ۸

$kx^2 - 4x - 9 = y$ $x_S = \frac{-b}{2a} = \frac{2}{k}$ $y_S = k\left(\frac{2}{k}\right)^2 - 4\left(\frac{2}{k}\right) - 9 = -\frac{4}{k} - 9$ ۹
طبق $x = \frac{k}{2} \rightarrow -4x - 4 = -4\left(\frac{2}{k}\right) - 4 = -\frac{8}{k} - 4$

$-\frac{4}{k} - 9 = -\frac{8}{k} - 4$ $\frac{4}{k} = 2$ $2k = 4$ $\boxed{k = 2}$

LINE NOTE

$-mx^2 + mx + 1 = -m - x \rightarrow -mx^2 + mx + 1 + m + x = 0$

$\Delta < 0 \rightarrow (m+1)^2 - 4(-m)(m+1) \rightarrow \underbrace{(m+1)}_{-1}\underbrace{(5m+1)}_{-\frac{1}{5}} < 0$

$-mx^2 + x(m+1) + (m+1) > 0$

$-1 \quad -\frac{1}{5} \quad (-1, -\frac{1}{5})$

$+ \quad \ominus \quad +$