Scanned with CamScanner

$2x^2 - ax + b = 0 \begin{cases} S = \frac{a}{2} \\ P = \frac{b}{2} \end{cases}$ $\quad 2ax^2 + ax - 6 \begin{cases} S = \frac{-1}{2} \to \alpha+\beta = \frac{1}{2} = \frac{a}{2} \to a = 1 \\ P = -3 \to b = -6 \end{cases}$

$\left[\frac{ab}{4}\right] = -2$

حل تمارین

(۵

$\alpha+\beta = \alpha'+\beta'+4 = -\frac{1}{2}+4 = \frac{7}{2} \to \frac{7}{2} = \frac{a}{2} \to \boxed{a=7}$

$2x^2 - 7x + b = 0$ $\quad \frac{b}{2} = P = (\alpha'+2)(\beta'+2) = \underset{-\frac{6}{14}}{\alpha'\beta'} + 2\underset{\frac{7}{14}}{(\alpha'+\beta')} + 4 = -\frac{6}{14} + 3$

$ab = 7\left(-\frac{6}{7}+6\right)$ $\quad b = -\frac{6}{7}+6$ $\quad \left[\frac{ab}{4}\right] = \left[\frac{36}{4}\right] = 9$

$-6+42 = 36$

$ax^2 - ax - b = 0 \quad , \quad 40\beta^3 + 20\alpha^2 - 20\beta = 17$ $\quad \beta, \alpha$ اختلاف ریشه‌ها؟ (۴۷

$S = 1 \to \alpha+\beta = 1 \to -\alpha = \beta - 1$

$\beta^2+\alpha^2 = S^2 - 2P = 1 + \frac{2b}{a}$ $\quad 20\beta^3 + 20\beta^2 + 20\alpha^2 - 20\beta = 17$

$20(\beta^2+\alpha^2) + 20\beta(\underset{-\alpha}{\beta-1}) = 20\left(1+\frac{2b}{a}\right) + 20\frac{b}{a} = 20 + 60\frac{b}{a}$

$20 + 60\frac{b}{a} = 17 \to \frac{b}{a} = -\frac{1}{20} \to b = -\frac{a}{20}$

$\alpha - \beta = \frac{\sqrt{\Delta}}{|a|} = \frac{\sqrt{a^2+4ab}}{|a|} \to \frac{\sqrt{a^2 - \frac{4a^2}{20}}}{|a|} = \sqrt{1-\frac{1}{5}} = \frac{2}{\sqrt{5}}$

(۸

$x^2 - (a+1)x + a = 0 \quad |a-1|$ $\quad$ دو عدد فرد متوالی $\quad \alpha\beta$

$\alpha' - \beta' = \frac{\sqrt{\Delta}}{|a|} = \frac{\sqrt{(a+1)^2 - 4a}}{|a|}$ $\quad a = 2\alpha+1$ و $2\alpha+3 = \beta$ $\quad \alpha\beta - \alpha'\beta' = ?$

$\alpha' - \beta' = 2\alpha+3-(2\alpha+1) = 2$

$x^2 - (3a+1)x + b = 0$ $\quad$ دو عدد زوج متوالی $\quad \alpha, \beta$

$2a, 2a+2 \to \beta' - \alpha' = 2 \to \frac{\sqrt{\Delta}}{|a|} = \frac{\sqrt{(3a+1)-4b}}{|a|}$

$\frac{|a-1|}{|a|} = 2 \to 2|a| = |a-1|$

$\frac{\sqrt{(3a+1)-4b}}{|a|} = 2 \to \sqrt{-2-4b} = 2 \to b = -\frac{3}{2}$

$2a = a-1 \to a = -1$ ق

$2a = 1-a \to 3a = 1 \to a = \frac{1}{3}$ غ ق

$P = \frac{b}{1} = -\frac{3}{2}$ $\quad -1-\left(-\frac{3}{2}\right) = \frac{1}{2} = \alpha\beta - \alpha'\beta'$

$\alpha' = -1 \quad \beta' = 1 \to \alpha'\beta' = -1$

(۹

$x_1 = 1, \; x_2 = a \to 3$ (دو عدد فرد متوالی) (۸

$P_1 = 3$

$x^2 - (3a+1)x + b = 0 \to x^2 - 10x + b = 0$

ریشه‌ها ۲ عدد زوج متوالی اند بین a و $a+2$

$S = 2\alpha + 2 = 10 \to \alpha = 4$

$P_2 = 24$

$24 - 3 = 21$

$2a = 1 - a \to 3a = 1 \to a = \frac{1}{3}$ گزینه ۱

$\alpha^2 = -1 \qquad \beta^2 = 1 \to \alpha^2\beta^2 = -1$

۱۸۱

$P = \frac{b}{2} = -\frac{3}{2}$

$-1 - (-\frac{3}{2}) = \frac{1}{2} = \alpha\beta - \alpha^2\beta^2$

۱۹)

جمع مربعات

$x^2 + x - 1 - m^2 = 0$

۳ = مجموع $\alpha^2 + \beta^2$

$\underbrace{(\alpha+\beta)^2}_{-1} - 2\alpha\beta = 1 + 2(1+m^2) = 3 + 2m^2$

۲

$y_{min} = 2m^2 + 3 \to m = 0 \to 3$

:۲۰)

حمیرا صفرزاده

(۱۰

$x_{رأس} = \frac{-b}{2a} = -1$ $\qquad$ $y_{رأس} = 1$

$-\frac{b}{2a} = -1 \rightarrow b = 2a$

$(-1, 1)$

$ax^2 + 2ax + c = y \rightarrow a - 2a + c = 1 \rightarrow c = a + 1$

$ax^2 + 2ax + a + 1 = y$

۵

$(\alpha + \beta)^2 - 2\alpha\beta = ۵ \rightarrow ۴ - ۲\left(\frac{a+1}{a}\right) = ۲ - \frac{۲}{a} = ۵ \rightarrow a = -\frac{۲}{۳}$

$\alpha + \beta = -\frac{2a}{a}$

$c = a + 1 = -\frac{۲}{۳} + ۱ = \frac{۱}{۳}$