۱۶,۵

$3x^2 - ax + 6 = 0$ $\quad S = \alpha + 3\alpha = 6\alpha = \frac{a}{3}$ (۱)

$P = \alpha \times 3\alpha = 3\alpha^2 = \frac{6}{3} \rightarrow \alpha^2 = \frac{6}{9} \quad \alpha = \pm\frac{2}{3}$ (۲)

$6 \times \frac{2}{3} = \frac{a}{3} \rightarrow a = 8 \qquad 6 \times (-\frac{2}{3}) = \frac{a}{3} \rightarrow a = -8 \qquad 8 + 8 = 16$

$3\sqrt{6}x^2 - (m+16)x + 1 = 0 \qquad mx^2 + 3\sqrt{6}x + 2 = 0$ (۳)

$\frac{1}{\sqrt{\alpha}} + \frac{1}{\sqrt{\beta}} = \frac{\sqrt{\alpha}+\sqrt{\beta}}{\sqrt{\alpha\beta}} = 4 \Rightarrow \sqrt{\alpha}+\sqrt{\beta} = \frac{5}{6}$ ۱,۵

$\alpha\beta + 2\sqrt{\alpha\beta} = \frac{25}{36} \qquad \frac{m+16}{36} + \frac{2}{6} = \frac{25}{36}$

$m + 16 + 12 = 25 \Rightarrow m = -1 \qquad -x^2 + 3x + 2 = 0 \rightarrow \frac{c}{a} = -2$

$6x^2 + kx^2 - 9x - 2 = 0$ (۴)

$\alpha + \beta = 1 \rightarrow \alpha + \frac{2}{\alpha} = 1 \rightarrow \alpha^2 - \alpha - 2 = 0$

$\alpha\beta = -2 \rightarrow \beta = \frac{-2}{\alpha} \rightarrow \alpha = 2 \quad \beta = -1 \quad k = -3$

$3^2 + 3k - 11 - 2 = 0$ ۵

$\alpha + \beta = -6, \quad \alpha\beta = a$ (۵)

$3\alpha^2 + 2\beta^2 = 12\sqrt{2} + 18 \rightarrow \frac{5}{2}(\alpha^2 + \beta^2) + \frac{1}{2}(\alpha^2 - \beta^2)$

$\alpha^2 + \beta^2 = 36 - 2\alpha\beta, \quad \alpha^2 - \beta^2 = -6\sqrt{b^2 - 4ac}$

$12\sqrt{2} + 18 = \frac{5}{2}(36 - 2\alpha\beta) + \frac{1}{2}(-6\sqrt{5})$ ۵

$24\sqrt{2} = -6\sqrt{5} \Rightarrow \sqrt{5} = -4\sqrt{2}, \quad 36 - 36 = -2\alpha\beta$

$\alpha\beta = 1 \rightarrow p = 1 \Rightarrow \alpha = 1$

$x^4 - 5x^2 + 6 = 0 \xrightarrow{x^2 = t} t^2 - 5t + 6 = 0$ ⑤

$t = \frac{5 + \sqrt{49}}{2} = x^2 \rightarrow x = \pm\sqrt{\frac{5 \pm \sqrt{49}}{2}}$

$\rightarrow S = 0 \quad P = \frac{-5 - \sqrt{49}}{2} \Rightarrow 2p^2 - 3sp + 2s = 4p^2$ ⑤

$2p^2 = 3sq + 5\sqrt{49}$

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⑥ ①

$2x^2 - ax + b = 0 \qquad S = \frac{a}{2}, \; P = \frac{b}{2}$

$2x^2 - ax + b = 0 \begin{cases} S = \frac{a}{2} \\ P = \frac{b}{2} \end{cases} \qquad 2x^2 + ax - 4 \begin{cases} S = \frac{-1}{2} \rightarrow \alpha + \beta = \frac{1}{2} = \frac{a}{2} \rightarrow a = 1 \\ P = -2 \rightarrow b = -4 \end{cases}$

$2ax^2 + ax - 8 = 0 \qquad S' = \frac{-1}{2} \qquad P' = -2 \quad \left[\frac{ab}{2}\right] = -2$

$\frac{-1}{2} \cdot 1 = \frac{1}{2} = \frac{a}{2} \Rightarrow a = 1 \qquad (\alpha + \frac{1}{2})(\beta + \frac{1}{2}) = -2 \rightarrow \alpha\beta = \frac{-16}{8} = -2$

$\Rightarrow \frac{b}{2} = -2 \rightarrow b = -4$

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

$S = a_0 l = 2\alpha + 2$
$P = a = \alpha^2 + 2\alpha$ $\Big\} \alpha^2 + 2\alpha + 1 = 2\alpha + 2 \quad \alpha = \pm 1 \Rightarrow \alpha = 1, a = 3$ ①

$S = l_0 = 2\beta + 2 \Rightarrow \beta = 4, \; b = 4 \times 7 = 28 \quad b - a = \underline{25}$

$\alpha + \beta = \frac{-b}{a} = -1$
$\alpha\beta = -1 - m^2$ $\Big\} \alpha^2 + \beta^2 = 1 - 2(-1 - m^2) = 2m^2 + 3 \xrightarrow{\min} \min = 3$ ④

$A, B \xrightarrow{\text{عرض}} \frac{-b}{2a} = -1 \rightarrow y = 1$ ⑯

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

$b = \sqrt{\frac{-1}{a}} \rightarrow x = -1 \pm t \rightarrow a = -1 \mp t \quad \beta = -1 - t$

$\alpha^2 + \beta^2 = 5 \rightarrow (-1+t)^2 + (-1-t)^2 = 2 + 2t^2$
$t^2 = \frac{9}{4} \rightarrow \frac{-1}{a} = \frac{9}{4} \rightarrow a = \frac{-4}{9}$, $y - 1 = a \rightarrow y = \frac{1}{9}$

$y =$

$\alpha = 1 - \beta \qquad 4\beta^2 + 2(1-\beta)^2 - 2\beta = 7 \Rightarrow 2\beta(\underbrace{\beta - 1}_{-\alpha}) = -1 \rightarrow \alpha\beta = \frac{1}{2} = \frac{-b}{a}$

$\rightarrow a = -2b \qquad ax^2 - ax - b = 0 \rightarrow -2bx^2 + 2bx - b = 0 \qquad |\alpha - \beta| = \frac{\sqrt{\Delta}}{|a|} = \frac{2}{\sqrt{2}}$