

$$y = x^2 + bx + c$$

$$\max x \leq v$$

①

$$-\frac{\Delta}{4a} = \max x \Rightarrow \frac{-(b^2 - 4ac)}{4a} = v$$

$$\frac{-(b^2 - 4ac)}{4a} = v \rightarrow b^2 - 4ac = 4av \rightarrow b^2 = 4a$$

$b = \pm 2\sqrt{a}$

الف) $P(x) = x^2 + 2x + 3$

②

ب) $P(x) = (x - 2)^2 - 2(x - 2) - 1$

الف) $x^2 \leq t \Rightarrow t^2 + 2t + 3 = 0$

$\Delta = 4 - 12 < 0 \Rightarrow$ مقبول
مقبول است

ب) $x^2 \leq t \Rightarrow t^2 - 2t - 1 = 0$

$(t - 3)(t + 1) = 0$

$x^2 \leq 3$

$t \leq 3$

$-x^2 = 1 \Rightarrow$ غلط

$t \leq -1$

$x^2 = -3 \Rightarrow -x^2 = 3 \Rightarrow x = \pm\sqrt{3}$

$$15m^2 - 14\alpha + m = 0$$

$$\alpha, \alpha + 1$$

③

$$m = ?$$

$$\alpha, \beta = ?$$

$$\alpha + \alpha + 1 = 8 \rightarrow 8 = \frac{-b}{a} = \frac{14}{\varepsilon} = \varepsilon$$

$$1\alpha + 1 = 15 \Rightarrow \alpha = \textcircled{1}, \alpha + 1 = \textcircled{15} \rightarrow \underline{6\alpha}$$

$$m = \frac{\alpha\beta}{\varepsilon} = \frac{c}{\varepsilon} \Rightarrow c = m = \underline{15}$$

$$15m^2 - 4\alpha + m - 1$$

$$m = ?$$

④

$$1\alpha - \beta = 1$$

$$8 = \frac{-b}{a} = \frac{4}{\omega} = 1$$

$$1\alpha - \beta = 1$$

$$\alpha + \beta = 8$$

$$1\alpha = 4 \rightarrow \alpha = 4, \beta = 0$$

$$\frac{m-1}{\omega} = \cancel{\alpha\beta}^0$$

$$\rightarrow m = 1$$

$$-m\alpha^2 + \epsilon\alpha + m^2 - \epsilon = 0$$

$$\alpha, \frac{1}{\alpha}$$

④

$$m = ??$$

$$\alpha + \frac{1}{\alpha} = 8$$

$$\frac{m^2 - \epsilon}{-m} = 1$$

$$\alpha \times \frac{1}{\alpha} = \rho \rightarrow \rho = 1$$

$$m^2 + m - \epsilon = 0$$

$$(m+1)$$

$$(m+1)$$

$$(m-1) = 0 \Rightarrow m = 1, -2$$

$$\rightarrow -m^2 + \epsilon m - 1 = 0$$

$$\Delta > 0 \checkmark \checkmark$$

$$+ \epsilon\alpha^2 + \epsilon\alpha + \epsilon = 0$$

$$\rightarrow \alpha\alpha\alpha\alpha\alpha \Rightarrow \text{مقلد ①}$$

$$\alpha, \beta = ??$$

$$m^2 - m\alpha + \epsilon = 0$$

$$\epsilon\beta^2 = \epsilon$$

⑤

$$\alpha\beta = \epsilon$$

$$\alpha\beta^2 = \epsilon \Rightarrow \frac{\alpha\beta^2}{\alpha\beta} = \frac{\epsilon}{\epsilon} \Rightarrow \alpha = \frac{\epsilon}{\beta}$$

$$\frac{\epsilon - m}{1} = 8 \Rightarrow \frac{\epsilon}{\epsilon} + \frac{\epsilon}{\epsilon} = m \Rightarrow m = \frac{\epsilon\epsilon}{1\epsilon}$$

$$\alpha^2 - \epsilon\alpha + m = 0$$

$$\alpha, \epsilon\alpha$$

$$m = ??$$

⑥

$$\alpha + \epsilon\alpha = \frac{-b}{a} = \epsilon \Rightarrow \alpha = 1$$

$$\rightarrow 1, \epsilon \rightarrow \frac{m}{1} = \epsilon \times 1 = \epsilon$$

$$n^P - \sqrt{n} + P = 0$$

$$x^P + \frac{1}{x^P} = ?$$

①

$$x^P + P = \sqrt{x}$$

$$(a+b)^P \leq a^P + b^P + Pab(a+b)$$

$$\rightarrow \left(x + \frac{P}{x}\right)^P \leq x^P + \frac{P}{x} + P\left(x + \frac{P}{x}\right) \rightarrow x^P + \frac{1}{x^P} =$$

$$\left(x + \frac{P}{x}\right)^P - P\left(x + \frac{P}{x}\right) = \sqrt{P} - \varepsilon \quad \forall \varepsilon > 0$$

$$x + \frac{P}{x}, \frac{x^P + P}{x}, \frac{\sqrt{x}}{x} \leq \sqrt{P}$$

$$\text{عند } h$$

$$h(x) = -1 \cdot x^P + 0 \cdot x$$

②

$$\text{عند } \max$$

$$\frac{-b}{Pa} = \frac{-0}{-P} = P, \omega = \frac{P}{P}$$

$$\Rightarrow -1 \cdot \left(\frac{P\delta}{\varepsilon}\right) + 0 \cdot x \frac{\delta}{P} = \frac{-P\delta_0}{\varepsilon} + 1P\delta$$

$$-4P\delta + 1P\delta = -3P\delta$$

$$\frac{11\delta \cdot \frac{1}{\varepsilon}}{\frac{P}{\varepsilon}} = \frac{11\delta}{P}$$

$$\text{الف) } (n-1)^P = Pn+1$$

③

$$a^P + P - Pn = Pn + P \Rightarrow a^P - Pn \leq 0 \quad n(a-\varepsilon) \leq 0$$

$$\text{ب) } a^P + Pn \leq |n+P|$$

$$1) a^P + Pn = n+P \rightarrow n^P + n - P = 0$$

$$(n+P)$$

$$(n-1) = 0 \rightarrow \underbrace{+1}_{\text{و}} \underbrace{-P}_{\text{و}}$$

$$(2) \quad x^2 + ym \mid m + y$$

$$m^2 + ym = -m - y$$

$$m^2 + ym + y = 0$$

$$(m+y)(m+y) = 0 \rightarrow \begin{array}{c} \text{QQE} \\ \uparrow \\ \text{---} \textcircled{1} \text{---} \textcircled{2} \end{array}$$

$$1 - y = 1 - y \vee \vee$$

$$E - E = y - y \vee \vee \Rightarrow \begin{array}{c} \text{---} \textcircled{+1} \text{---} \textcircled{-2} \end{array}$$