

$$\textcircled{1} x_{\min} = \frac{-b}{2a} \Rightarrow \frac{b}{2a} \quad y_{\max} = -\left(\frac{-b}{2a}\right)^2 + b\left(\frac{b}{2a}\right) + c \Rightarrow \frac{b^2}{4a} + \frac{b^2}{2a} + c$$

$$\Rightarrow y_{\max} = \frac{b^2}{4a} + c \rightarrow \frac{b^2}{4} + c = 14 \rightarrow \frac{b^2}{4} = 14 - c \rightarrow b = \pm \sqrt{4(14 - c)}$$

$$\textcircled{2} \text{ الف) } t = x^2 \rightarrow t^2 + 2t + 3 = 0 \quad \Delta < 0 \quad \text{عديم}$$

$$\text{ب) } t = \varepsilon - x^2 \rightarrow t^2 - 2t - 3 = 0 \quad (t-3)(t+1) = 0$$

$$t = 3 \rightarrow \varepsilon - x^2 = 3 \rightarrow x^2 = -1 \quad \text{لا}$$

$$t = -1 \rightarrow \varepsilon - x^2 = -1 \rightarrow x^2 = 1 \rightarrow x = \pm 1$$

$$\textcircled{3} \alpha = \beta + 2 \rightarrow \alpha + \beta = \frac{-b}{a} \quad 2\beta + 2 = \frac{-14}{\varepsilon} \rightarrow 2\beta = -2$$

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

$$\Delta > 0$$

$$\alpha\beta = \frac{c}{a} \quad \beta = -1 \quad \frac{m}{\varepsilon} \rightarrow m = 1$$

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$$\textcircled{4} 2\alpha - \beta = \varepsilon \rightarrow \beta = 2\alpha - \varepsilon$$

$$\alpha + \beta = \frac{9}{\mu} = 1 \rightarrow \alpha + 2\alpha - \varepsilon = 1 \rightarrow 3\alpha - \varepsilon = 1 \rightarrow \alpha = \frac{1 + \varepsilon}{3}$$

$$\alpha\beta = \frac{m-1}{\mu} \quad \frac{m-1}{\mu} = 0 \quad m-1 = 0 \quad m = 1$$

$$\Delta \geq 0$$

$$\textcircled{5} \text{ ج) } \frac{c}{a} = 1 \Rightarrow \frac{-m^2 - 1}{m} = 1 \rightarrow -m^2 + 1 = m \rightarrow m^2 + m - 1 = 0$$

$$(m+1)(m-1) = 0 \quad m = -1 \rightarrow \Delta > 0 \quad \text{ن}$$

$$m = 1 \rightarrow \Delta > 0 \quad \checkmark$$

$$\textcircled{6} \alpha\beta = \varepsilon \rightarrow \frac{\alpha\beta}{\mu} = \frac{\varepsilon}{\mu} \rightarrow \frac{\varepsilon}{\mu} = 1 \rightarrow \beta = \frac{\varepsilon}{\mu} \quad \alpha = \frac{9}{\varepsilon}$$

$$\alpha + \beta = m \rightarrow m = \frac{\varepsilon}{\mu} + \frac{9}{\varepsilon} \geq \frac{18}{\mu}$$

$$\Delta > 0$$

$$① \quad x \approx \mu/3$$

$$x^m \approx m \rightarrow \mu/3 \approx m$$

$$x + \mu \approx \xi \quad \bullet \quad \mu/3 \approx \xi \rightarrow \mu \approx 1 \rightarrow x \approx \mu \rightarrow m \approx \mu$$

$$\Delta 56$$

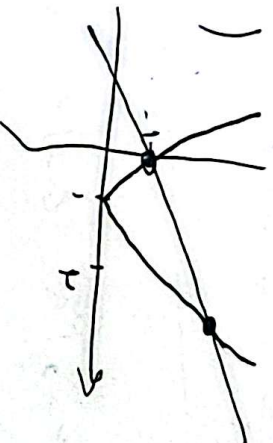
$$② \quad \text{Solve } y_{max} = \frac{-b}{2a} = \frac{-(0.1)^r}{(x(-1.))} = \frac{\mu \Delta \cdot}{\epsilon \cdot}$$

$$\text{Solve } h(t) = 0 \rightarrow -1 \cdot t^r + \omega t \sqrt{\frac{2 \cdot 4 \cdot r \cdot \Delta \cdot m}{\epsilon \cdot}}$$

$$-1 \cdot t^r (t - \Delta) = 0$$

$$\begin{cases} t = 0 \\ t = \Delta \end{cases}$$

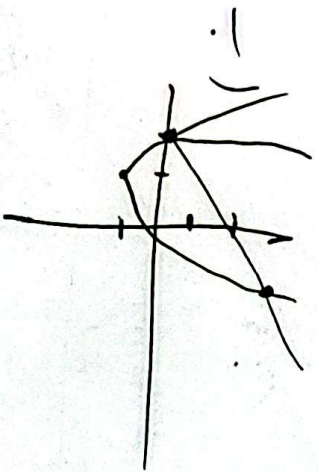
$$③$$



$$x^r - 2x + 1 \approx \mu x + 1$$

$$\begin{cases} x = 0 \\ x = \Delta \end{cases}$$

Solve



$$x^r - 1$$