

۱۴,۵

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$$\log_n^m = a \quad \log_{mn}^{m^2n} = b \quad b = \frac{\log_{mn}^{m^2n}}{\log_n^{mn}} = \frac{\log_n^{m^2} + \log_n^n}{\log_n^m + \log_n^n} = \frac{2a+1}{a+1}$$

$$\left[\frac{a+1}{a+1} + \frac{a}{a+1} \right] = 1 + \left[\frac{a}{a+1} \right] = 1$$

الف) $y = \sqrt{\frac{x}{\log \frac{1}{x}}}$ $\frac{x}{\log \frac{1}{x}} \geq 0 \Rightarrow x \geq 0 \quad \log \frac{1}{x} > 0 \Rightarrow x < 1 \quad (I) \cap (II) = (0, 1) = D_f$

ب) $y = \frac{\log(x^2-x+1)}{\sqrt{x^2-1}+1}$ $x^2-x-2 > 0 \Rightarrow (x-2)(x+1) > 0 \Rightarrow x < -1 \text{ or } x > 2$

$$x^2-1 > 0 \Rightarrow x < -1 \text{ or } x > 1 \quad (I) \cap (II) = \emptyset \quad (-\infty, -1) \cup (2, +\infty)$$

$$2 \log_a^a + \log_a^{\sqrt{a}} = 2 \log_{\sqrt{a}}^a + \log_a^{\sqrt{a}} = \log_{\sqrt{a}}^a + \log_{\sqrt{a}}^{\sqrt{a}} = \log_{\sqrt{a}}^a + 1 \Rightarrow \log_a^a = 1$$

$$\log_{\sqrt{a}}^a = 1 \quad \log_a^a = 1 \quad \boxed{a = 4}$$

$$\log 2 = 0.3 \quad \log 3 = 0.477 \quad \frac{\sqrt{\Delta}}{|a|} = \frac{\sqrt{(\log 2)^2 + \varepsilon (\log \frac{10}{3} \times \log 10)}}{|\log \frac{10}{3}|} = \frac{\log 10 - \log 3}{\log \frac{10}{3}}$$

$$= \frac{1 - 0.477}{0.477} = \frac{0.523}{0.477} \approx 1.096$$

$$\log_2^2 = 1.8 \quad \log_2^2 = 0.5 \rightarrow \log_2^2 = 2$$

$$\log_{12}^{10} = \frac{1}{\log_{12}^{\frac{10}{1}}} = \frac{1}{\log_{12}^{\frac{10}{1}}} = \frac{\log_{12}^{\frac{10}{1}}}{\log_{12}^{\frac{10}{1}}} = \frac{\log_2^{\frac{10}{1}} + \log_2^{\frac{10}{1}}}{\log_2^{\frac{10}{1}} + \log_2^{\frac{10}{1}}} = \frac{1+2}{1.8+1} = \frac{3}{2.8}$$

$y^0 = 1, y^1 = 1, y^2 = 1, y^{\frac{1}{2}} = \frac{1}{\sqrt{2}}$

$\rightarrow 1, 1, 1, 1 \rightarrow \begin{cases} a_1 = 1 \\ a_2 = -\frac{1}{\sqrt{2}} \end{cases} \rightarrow a_1 - a_2 = \frac{1}{\sqrt{2}}$

$$\log_{\mu}^{\omega} = 1,0$$

$$\log_{\mu}^{\mu} = 1,4$$

$$\log_{\mu}^{\omega} = \frac{\log_{\mu}^{\omega}}{\log_{\mu}^{\mu}} = \frac{\log_{\mu}^{\omega} + \log_{\mu}^{\mu}}{\log_{\mu}^{\omega} + \log_{\mu}^{\mu}} = \frac{1 + 1,4}{1,4}$$

$$\log_{\mu}^{\omega} = \log_{\mu}^{\omega}$$

$$\frac{\log_{\mu}^{\omega}}{\log_{\mu}^{\mu}} = \frac{\log_{\mu}^{\omega} + \log_{\mu}^{\mu}}{\log_{\mu}^{\omega} + \log_{\mu}^{\mu}} = \frac{1,4 + 1}{1,0 + 1} = \frac{1,4}{2} = 0,7$$

$$\log_{\mu}^{\omega} = m = \frac{1}{\mu} \log_{\mu}^{\omega} = \frac{1}{\mu} (\log_{\mu}^{\omega} + \log_{\mu}^{\mu}) = \frac{1}{\mu} (1 + \log_{\mu}^{\mu}) = \frac{1}{\mu} + \frac{1}{\mu} \log_{\mu}^{\mu} = m$$

$$\log_{\mu}^{\omega} = m - \frac{1}{\mu} \quad \log_{\mu}^{\omega} = \frac{\mu m - 1}{\mu}$$

$$\log_{\mu}^{\omega} = \frac{1}{\mu} \log_{\mu}^{\omega} = \frac{1}{\mu} (\log_{\mu}^{\omega} + \log_{\mu}^{\mu}) = \frac{1}{\mu} (1 + \frac{\mu m - 1}{\mu}) = \frac{1 + \mu m - 1}{\mu^2}$$

$$(0,7)^{x-1} = (\frac{1,4}{2})^{x-1} \rightarrow (\frac{0,7}{1})^{-1 \times (x-1)} = (\frac{0,7}{1})^{\mu \times x}$$

$$1 - x = \mu x \rightarrow \mu x + x - 1 = 0 \rightarrow x = -1$$

$$\downarrow x = \frac{1}{\mu}$$

$$\log_{\mu}^{\omega} \Rightarrow \log_{\mu}^{\omega} = \frac{1}{\mu} \log_{\mu}^{\omega} = \frac{1}{\mu} \log_{\mu}^{\omega}$$

$$\log_{\mu}^{\omega} = a \quad \log_{\mu}^{\omega} = \frac{1}{\mu} \log_{\mu}^{\omega} = \frac{1}{\mu} (1 + a) \quad \log_{\mu}^{\omega} = 1 + a = \log_{\mu}^{\omega} + \log_{\mu}^{\mu}$$

$$\log_{\mu}^{\omega} - 1 = a \quad b = \frac{1}{\mu} a = \frac{1}{\mu} \log_{\mu}^{\omega}$$

$$- \frac{1}{\mu} a + b + \frac{1}{\mu} c = 0$$

$$-\frac{1}{\mu} a = -\frac{1}{\mu} a = -\frac{1}{\mu} a = -\frac{1}{\mu} a \quad \frac{1}{\mu} a = \log_{\mu}^{\omega} \quad b = \frac{1}{\mu} a \quad a = \frac{b + c}{\mu}$$

$$a = \frac{b + c}{\mu} \rightarrow b = \frac{1}{\mu} a - c \rightarrow \frac{1}{x_1 + 2x_2} = \frac{1}{5} = \frac{1}{\mu} a = \frac{1}{\mu} a = \frac{1}{\mu} a$$

$$\rightarrow \frac{1}{\mu} a = \log_{\mu}^{\omega} \rightarrow \frac{1}{\mu} a = \log_{\mu}^{\omega} \rightarrow 1 - \log_{\mu}^{\omega} = \frac{c}{\mu} \rightarrow 1 - \log_{\mu}^{\omega} = \frac{c}{\mu}$$

$$\left(\frac{1}{\mu}\right)^{\frac{1}{\mu}} = \left(\mu^{-\frac{1}{\mu}}\right)^{\frac{1}{\mu}} = \left(\mu^{-\frac{1}{\mu^2}}\right)^{\frac{1}{\mu}} \rightarrow \left(\mu^{-\frac{1}{\mu^2}}\right)^{\frac{1}{\mu}} = \mu^{-\frac{1}{\mu^3}}$$

$$\left(\frac{1}{\mu}\right)^{\frac{1}{\mu}} = \left(\mu^{-\frac{1}{\mu}}\right)^{\frac{1}{\mu}} = \left(\mu^{-\frac{1}{\mu^2}}\right)^{\frac{1}{\mu}} = \mu^{-\frac{1}{\mu^3}}$$