

11, 13

آرشیاب درسی / تاریخ دفتر / تاریخ مشاهده

$$\log_n^m = a \rightarrow \frac{\log^m}{\log n} = a \quad b = \log_{mn}^{m^r n} = \frac{r \log m + \log n}{\log m + \log n} = \frac{ra + 1}{a + 1}$$

$$\rightarrow \frac{ra + 1}{a + 1} = 1 + \frac{a}{a + 1} \rightarrow 0 < \frac{a}{a + 1} < 1 \rightarrow 1 < \underbrace{1 + \frac{a}{a + 1}}_b < 2$$

$$\Rightarrow [b] = 1$$

$$y = \sqrt{\frac{x}{\log \frac{x}{\frac{1}{r}}}} \quad \log \frac{x}{\frac{1}{r}} \neq 0 \rightarrow x \neq 1 \quad (1) \quad x > 0 \quad (2)$$

$$\frac{x}{\log \frac{x}{\frac{1}{r}}} \geq 0 \xrightarrow{x > 0} \log \frac{x}{\frac{1}{r}} > 0 \rightarrow x < 1 \quad (3)$$

$$\Rightarrow D = (1) \cap (2) \cap (3) = (0, 1)$$

$$y = \frac{\log_e (x^2 - x - 2)}{\sqrt{x^2 - 1} + 1} \quad x^2 - x - 2 = (x - 2)(x + 1) > 0 \quad \begin{array}{c|cc} & -1 & 2 \\ \hline + & \phi & - & \phi & + \end{array}$$

$$\rightarrow (-\infty, -1) \cup (2, +\infty) \quad (1)$$

$$x^2 - 1 \geq 0 \rightarrow (x + 1)(x - 1) \geq 0 \quad \begin{array}{c|cc} & -1 & 1 \\ \hline + & \phi & - & \phi & + \end{array} \rightarrow (-\infty, -1] \cup [1, +\infty) \quad (2)$$

$$\sqrt{x^2 - 1} + 1 \neq 0 \rightarrow \text{میشود 0}$$

$$D = (1) \cap (2) = (-\infty, -1) \cup (2, +\infty)$$

$$r \log_{\frac{a}{r}} + \log_{\frac{r}{a}} = r \rightarrow \log_{\frac{a}{r}} + \frac{1}{\log_{\frac{a}{r}}} = r$$

$$\rightarrow \log_{\frac{a}{r}} = y \rightarrow y + \frac{1}{y} = r \rightarrow y^2 - ry + 1 = 0 \rightarrow y = 1 \rightarrow \log_{\frac{a}{r}} = 1$$

$$\rightarrow \frac{a}{r} = a \rightarrow a = r$$

$$\log \frac{1}{r}$$

$$\log_{\frac{\omega}{r}} = \log_{\frac{\omega}{r}} \omega - \log_{\frac{\omega}{r}} r = \log_{\frac{\omega}{r}} \omega - \log_{\frac{\omega}{r}} r = 1 - \frac{1}{r} = \frac{r-1}{r}$$

$$\log^4 = r \log^3 = r \left(\frac{r-1}{r} \right) = r-1$$

$$\log \omega = \log^3 + \log^4 = \log^3 + \log^4 = \log^3 + \log^4 = \frac{r-1}{r} + 1 = \frac{r-1+r}{r} = \frac{2r-1}{r}$$

$$\Rightarrow \left(\frac{r-1}{r} \right) x^r + (r-1) x = \frac{2r-1}{r} = 0 \rightarrow x = 1, x = \frac{-11}{r} \quad 1 - \left(\frac{-11}{r} \right) = \frac{11}{r}$$

$$\log_{\frac{1}{r}} = \frac{\log_{\frac{1}{r}} \omega}{\log_{\frac{1}{r}} r} = \frac{\log_{\frac{1}{r}} \omega + \log_{\frac{1}{r}} r}{\log_{\frac{1}{r}} r + \log_{\frac{1}{r}} r} = \frac{\frac{1}{\omega} + 1}{1 + \frac{r}{1}} = \frac{r}{r+1} = \frac{1}{r+1}$$

$$\log_{\frac{1}{\omega}} = \frac{\log_{\frac{1}{\omega}} r}{\log_{\frac{1}{\omega}} \omega} = \frac{\log_{\frac{1}{\omega}} r + \log_{\frac{1}{\omega}} \omega}{\log_{\frac{1}{\omega}} \omega + \log_{\frac{1}{\omega}} \omega} = \frac{\frac{1}{r} + 1}{\frac{1}{\omega} + 1} = \frac{r}{r+1} \times \frac{1}{r} = \frac{1}{r+1}$$

$$\log_{\frac{1}{r}} = \frac{\log_{\frac{1}{r}} \omega}{\log_{\frac{1}{r}} r} = \frac{\log_{\frac{1}{r}} \omega}{r} = m \rightarrow \log_{\frac{1}{r}} \omega = r m \rightarrow \log_{\frac{1}{r}} \omega = \log_{\frac{1}{r}} r + r \log_{\frac{1}{r}} r$$

$$\rightarrow \log_{\frac{1}{r}} r = \frac{r m - 1}{r} \quad \log_{\frac{1}{r}} r = \frac{\log_{\frac{1}{r}} r}{\log_{\frac{1}{r}} r} = \frac{\log_{\frac{1}{r}} r}{r} \rightarrow \log_{\frac{1}{r}} r = \log_{\frac{1}{r}} r + \log_{\frac{1}{r}} r$$

$$\rightarrow \log_{\frac{1}{r}} r = r + \frac{r m - 1}{r} = \frac{r m + r}{r} \rightarrow \log_{\frac{1}{r}} r = \frac{r m + r}{r} = \frac{r m + r}{r} = \frac{r(m+1)}{r}$$

$$\frac{1}{r} \omega = \left(\frac{\omega}{r} \right)^r \cdot \frac{1}{r} = \frac{r}{\omega} = \left(\frac{\omega}{r} \right)^{-1}$$

$$\Rightarrow \left[\left(\frac{\omega}{r} \right)^r \right]^{x^r} = \left(\frac{\omega}{r} \right)^{r x^r} = \left(\frac{\omega}{r} \right)^{-(r m - 1)} = \left(\frac{\omega}{r} \right)^{-r m + 1}$$

$$\Rightarrow r m^r = -r m + 1 \rightarrow r m^r + r m - 1 = 0 \rightarrow x = -1, x = \frac{1}{r}$$

$$9x + 1 > 0 \rightarrow 9x > -1 \rightarrow x > -\frac{1}{9} \Rightarrow \frac{x}{9} = -\frac{1}{9} \rightarrow \boxed{x = \frac{1}{3}} \checkmark$$

$$\Rightarrow \log_{\frac{1}{r}} r = \log_{\frac{1}{r}} r = \frac{r}{r}$$

Subject.

Day. Month. Year.

$$\log_n b = \frac{\log_r b}{\log_r n} = \frac{\log_r b}{r} = \frac{r}{r} (1+a) \xrightarrow{\times r} \log_r b = r + ra \quad \text{--- 9}$$

$$b = r^{(r+ra)} = r^r \times r^{ra} \quad \log_r r = a \rightarrow r^a = r \rightarrow r^{ra} = r^r = 9$$

$$\Rightarrow b = 9 \times 9 = 81 \rightarrow \log_n b = r (r+ra) = 1 (1+1) = 2$$

$$\rightarrow \log_{10} 100 = 2$$

$$S = \frac{b}{ca} \rightarrow \frac{1}{S} = \log^c b \rightarrow \frac{ca}{b} = \log^c b = r \log^r b \rightarrow \log^r b = \frac{ca}{b} \quad \text{--- 10}$$

$$a = \frac{b+c}{r} \rightarrow ra = b+c \rightarrow c = ra - b \xrightarrow{\div a} \frac{c}{a} = r - \frac{b}{a}, \quad \frac{b}{a} = \frac{c}{\log^c b}$$

$$\rightarrow \frac{c}{a} = 1$$

$$\rightarrow \left(\frac{1}{\sqrt[r]{r}} \right)^{\frac{c}{a}} \rightarrow \frac{1}{\sqrt[r]{r}} = r^{\frac{1}{r}} \rightarrow r^{\frac{c}{ra}} \Rightarrow r^{\frac{1}{r}} = r^{-1} = \frac{1}{r}$$

$$a = \frac{b+c}{r} \rightarrow b = ra - c \rightarrow \frac{1}{2r_1 + 2r} = \frac{1}{S} = \frac{ra}{b} = \frac{ra}{ra-c} = r \log^r$$

$$\rightarrow \frac{ra}{ra-c} = \log^r \xrightarrow{\text{عكس}} \frac{ra-c}{ra} = \log_r^{1.} \rightarrow 1 - \log_r^{1.} = \frac{c}{ra} \rightarrow r - \log_r^{1.} = \frac{c}{a} \quad (1)$$

$$\left(\frac{1}{\sqrt[r]{r}}\right)^{\frac{c}{a}} = \left(r^{-\frac{1}{r}}\right)^{\frac{c}{a}} = \left(r^{\frac{c}{a}}\right)^{-\frac{1}{r}} \xrightarrow{(1)} \left(r^{r - \log_r^{1.}}\right)^{-\frac{1}{r}}$$

$$\left(\frac{r^r}{r \log_r^{1.}}\right)^{-\frac{1}{r}} = \left(\frac{r}{1.}\right)^{-\frac{1}{r}} = (r\omega)^{\frac{1}{r}} = \sqrt[r]{\omega}$$