

Question

$$\log \frac{m}{n} = a$$

$$\frac{\log m}{\log n} = a$$

$$b = \log \frac{m^r m}{mn} = \frac{r \log m + \log m}{\log n + \log n} = \frac{r(a+1)}{a+1} = 1 + \frac{r}{a+1} \quad [6]$$

$$ii) y = \sqrt{\frac{n}{\log \frac{n}{2}}}$$

iii)

$$Dy = (0, 1)$$

$$\log \frac{n}{2} > 0 \Rightarrow \log \frac{n}{2} = 0 \Rightarrow n = 2 \Rightarrow n \neq 1 \quad \frac{n}{\log \frac{n}{2}} \geq 0 \quad -0 < n < 1 \Rightarrow \text{نفي}$$

$$y = \frac{\log (m^r - n - 1)}{m^r - n - 1}$$

$$m^r - n - 1 > 0 \Rightarrow \frac{-1}{m^r - 1} > 0$$

$$m < -1 \quad \cup \quad m > 1$$

$$\sqrt{m^r - 1} + 1 \neq 0$$

$$m \geq 1 \quad \cup \quad m \leq -1$$

$$m < -1 \quad \cup \quad m > 1 \rightarrow (-\infty, -1) \cup (1, \infty)$$

$$r \log \frac{a}{n} + \log \frac{n}{a} = r \Rightarrow \log \frac{a}{n} + \log \frac{n}{a} = r$$

$$\log \frac{a}{n} + \frac{1}{\log \frac{a}{n}} = r \Rightarrow t + \frac{1}{t} = r \Rightarrow t^2 - rt + 1 = 0$$

$$(t-1)^2 = 0$$

$$t = 1 \Rightarrow \log \frac{a}{n} = 1 \Rightarrow \frac{a}{n} = 10 \Rightarrow a = 10n$$

$$\log \frac{a}{n} = \log \frac{10}{2} = 1 - \log 2 = 1 - \frac{1}{2} = \frac{1}{2}$$

$$\log \frac{a}{n} = \log \frac{10}{2} = 1 - \log 2 = \frac{1}{2} = \frac{1}{2} \Rightarrow \frac{1}{2}$$

Exercice 10

$$\log^2 = r \log^r = r \cdot \frac{1}{r} = 1$$

$$\log^{10} = \log^{2 \times 5} = \log^2 + \log^5 = 1 + \frac{1}{5} = \frac{6}{5} \Rightarrow \frac{1}{10} \log^{10} = \frac{1}{10} \cdot \frac{6}{5} = \frac{3}{25}$$

$$x_{10} = \frac{1}{10} \log^{10} = \frac{1}{10} \cdot \frac{6}{5} = \frac{3}{25} \quad \text{avec } \log^2 = 1, \log^5 = \frac{1}{5} \Rightarrow \frac{1}{10} \log^{10} = \frac{1}{10} \cdot \frac{6}{5} = \frac{3}{25}$$

$$\log^r = \frac{1}{r} \Rightarrow \frac{\log^r}{\log^r} = \frac{1}{r} \Rightarrow \frac{\log^r}{\log^r} = \frac{1}{r} \Rightarrow \frac{\log^r}{\log^r} = \frac{1}{r}$$

$$\frac{\log^r}{1 - \log^r} = \frac{1}{r} \Rightarrow 1 - \log^r = r \log^r \Rightarrow r \log^r = 1 \Rightarrow \log^r = \frac{1}{r}$$

$$\log^r = \frac{1}{r} \Rightarrow \frac{\log^r}{\log^r} = \frac{1}{r} \Rightarrow \frac{\log^r}{\log^r} = \frac{1}{r} \Rightarrow \log^r = \frac{1}{r}$$

$$\log^{\frac{1}{10}} = \frac{\log^{\frac{1}{10}}}{\log^{\frac{1}{10}}} = \frac{1}{\log^{\frac{1}{10}} + \log^{\frac{1}{10}}} = \frac{1}{\frac{1}{10} + \frac{1}{10}} = \frac{10}{2}$$

$$\log^{\frac{1}{10}} \times \log^{\frac{1}{10}} = \log^{\frac{1}{10}} \Rightarrow \log^{\frac{1}{10}} \times \log^{\frac{1}{10}} = \frac{1}{10} \Rightarrow \log^{\frac{1}{10}} = \frac{1}{10}$$

$$\log^{\frac{1}{10}} = \frac{\log^{\frac{1}{10}}}{\log^{\frac{1}{10}}} = \frac{\log^{\frac{1}{10}} + \log^{\frac{1}{10}}}{\log^{\frac{1}{10}} + \log^{\frac{1}{10}}} = \frac{1 + \frac{1}{10}}{1 + \frac{1}{10}} = \frac{11}{11} = 1$$

$$\log_p \times \log_p = \log_p \rightarrow \log_p \times \log_p = 1.2 + 1.6 \Rightarrow \log_p = 2.8 \quad -4$$

$$\log_{10}^4 \rightarrow \frac{\log_{10}^2}{\log_{10}^2} \quad \log_{10}^4 = \frac{\log_{10}^2 + \log_{10}^2}{\log_{10}^2 + \log_{10}^2} = \frac{1 + 1.6}{1.2 + 1.6} = \frac{2.6}{2.8} \quad [40]$$

حلول مضروب

$$\frac{\log_n^{12}}{\log_n^8} \rightarrow \log_n^{12} \rightarrow \log_n^{12} = \log_n^8 + \log_n^4 = \frac{8}{2} + \frac{1}{2} \log_n^4 \quad -v$$

$$\log_n^{12} \Rightarrow \log_n^8 + \log_n^4 \Rightarrow m \rightarrow \frac{8}{2} \log_n^4 + \frac{1}{2} \log_n^4 \Rightarrow m \rightarrow \log_n^4 = \frac{m-1}{2}$$

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