

$$n^a = m$$

$$\log_{mn} m^n = b \rightarrow \log_{\frac{n^a}{n^a \times n}} m^n = b \rightarrow \log_{\frac{n^a}{n^{a+1}}} m^n = b \rightarrow \frac{ra+1}{a+1} \log_{\frac{n^a}{n^{a+1}}} m^n = b \rightarrow \left[\frac{ra+1}{a+1} \right] = [b]$$

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

$$\text{الف) } y = \sqrt{\frac{x}{\log_{\frac{1}{x}} x}} \quad \text{ب) } y = \frac{\log_2 (x^2 - x - 2)}{\sqrt{x^2 - 1} + 1}$$

$$x > 0$$

$$\log_{\frac{1}{x}} x \neq 0 \rightarrow x \neq 1$$

$$\sqrt{x^2 - 1} \neq -1 \quad \text{①}$$

$$x^2 - 1 \geq 0$$

$$(x-1)(x+1) \geq 0$$

$$\begin{array}{c|c|c} -1 & 1 & \\ \hline + & - & + \end{array}$$

$$x = -1, 2$$

$$D_f = (-\infty, -1) \cup (1, +\infty)$$

$$\frac{1}{x+1} \quad D_f = (0, 1)$$

$$r \log_x a + \frac{1}{r} \log_a^n = r \rightarrow \log_a^n = A$$

$$\frac{r}{A} + \frac{1}{r} A = r \xrightarrow{x=rA} r + Ar - \varepsilon A = 0 \rightarrow Ar - \varepsilon A + \varepsilon = 0 \rightarrow (A-r)^r = 0 \rightarrow A=r$$

$$\log_a^9 = r \rightarrow a^r = 9 \rightarrow a = 3$$

$$\log_{\frac{9}{r}} = \log 9 - \log r = 1 - \log r - \log r = 1 - 0.13 - 0.13 = 0.74$$

$$\log 9 = \log r^r \Rightarrow r \log r = 2(0.13) = 0.26$$

$$\log 12 = \log(r \times 4) = \log r + \log 4 \leq \log r = 1 - \log r = 0.13 + 1 - 0.13 = 1$$

$$\rightarrow 0.13 n^r + 0.13 n - 1/1 = 0 \rightarrow r n^r + 13 n - 11 = 0 \quad \begin{cases} n=1 \\ n=-1/13 \end{cases} \rightarrow 1 - (-1/13) = 14/13$$

$$\log_r^r \times \log_r^v = 0.13 \times 1.13 > \log_a^v = 1/2$$

$$\log_{1/2}^1 = \frac{\log_r^r + \log_a^v}{\log_r^r + \log_a^v} = \frac{0.13+1}{0.13+1/2} = \frac{1/2}{1/4} = \frac{1/2}{1/4}$$

parsian

Subject

Date : Year

Month

Day

$$\log_{10}^r = \frac{\log 4}{\log 10} = \frac{\log r + \log r}{\log r + \log r} = \frac{\frac{\omega}{\lambda} + 1}{\frac{\mu}{r} + 1} = \frac{\frac{1r}{\lambda}}{\frac{\omega}{r}} = \frac{1r}{\lambda} = \frac{1r}{r} = 1/4 \quad (5) \quad (7)$$

$$\frac{1}{r} \log_r^{1n} = \frac{1}{r} (1 + r \log_r^r) = m \rightarrow \log_r^r = \frac{r m - 1}{r} \quad (V)$$

$$\log_{\frac{1}{2}}^{1r} = \frac{1}{r} \log_r^{1r} = \frac{1}{r} (r + \log_r^r) = \frac{1}{r} \left(\frac{\varepsilon}{r} + \frac{r m - 1}{r} \right) \rightarrow \frac{r m + r}{\varepsilon} = \frac{r}{\varepsilon} (m + 1) \quad (5)$$

$$\left(\frac{\varepsilon}{10} \right)^{r n - 1} = \left(\left(\frac{\omega}{r} \right)^r \right)^{x r} \rightarrow \left(\frac{r}{a} \right)^{r n - 1} = \left(\frac{\omega}{r} \right)^{r n r} \quad (A)$$

$$\left(\frac{\omega}{r} \right)^{r n} = \left(\frac{\omega}{r} \right)^{r n r} \rightarrow r n r = 1 - r n \rightarrow r n r + r n - 1 = 0 \quad \begin{cases} n = \frac{1}{r} \\ n = -1 \text{ to } \infty \end{cases} \quad (5) \quad 10$$

$$\log_4 \left(\frac{1}{r} \right) + 1 = \log_{\frac{1}{r}}^r : \log_{\frac{1}{r}}^r = \frac{r}{r} \log_r^r = \frac{r}{r}$$

$$\log_{\frac{1}{r}}^b = \frac{r}{r} (1 + \log_r^r) \rightarrow \log_{\frac{1}{r}}^b = \frac{r}{r} \log_r^r \rightarrow \log_{\frac{1}{r}}^b = \log_{\frac{1}{r}}^{r r} \rightarrow b = r r \quad (9) \quad 15$$

$$= \log_{10}^{r \times r r - 1} \Rightarrow \log_{10}^{100} = r$$

$$S = \frac{-b}{-2a} = \frac{b}{f_a} \Rightarrow \log f = \frac{b}{\varepsilon a} \sim \frac{a}{b} = \frac{\log \varepsilon}{\varepsilon} = \frac{r \log r}{r} = \frac{\log r}{r} \quad (5) \quad (10)$$

$$r a = b + c \rightarrow \frac{r a}{b} = 1 + \frac{c}{b} \Rightarrow \frac{a}{b} = \frac{\log r}{r} \sim r \left(\frac{\log r}{r} \right) = 1 + \frac{c}{b}$$

$$\rightarrow \frac{c}{b} = -1 + \log r \rightarrow \frac{c}{a} = \frac{-1 + \log r}{\frac{\log r}{r}} \rightarrow \frac{c}{a} = \frac{\log r - \log 10}{\frac{1}{r} \log r} =$$

$$\frac{\log \frac{1}{r}}{\frac{1}{r} \log r} = \frac{\log \frac{1}{a}}{\frac{1}{r} \log r} \rightarrow \frac{\log \frac{1}{a}}{\log \sqrt{r}} \approx \log \frac{1}{\sqrt{r}} \rightarrow \left(\frac{1}{\sqrt{r}} \right)^{\frac{c}{a}} = \left(\frac{1}{a} \right)^{\frac{1}{\sqrt{r}}} \rightarrow$$

$$= \left(\frac{1}{a} \right)^{\frac{1}{2}} = \sqrt{a}$$