

$$\log_n^m = a, \log_{mn}^{m^r n} = b \rightarrow [b] = ?$$

(1)

$a > 0$ $\log_n^m = a \rightarrow m = n^a$

$$\log_{n^a \times n}^{(n^a)^r \times n} = \log_{n^a \times n}^{n^{a \times r} \times n^1} = \log_{n^a \times n}^{n^{a \times r + 1}} = \log_{n^a \times n}^{n^{a \times r}} + \log_{n^a \times n}^{n^1} = 1 + \log_{n^a \times n}^{n^a} = b$$

$$[b] = [1 + \log_{n^a \times n}^{n^a}] = [1, \dots] = [1]$$

$\downarrow$
 $a > 0 \rightarrow \log_{n^a \times n}^{n^a} : 1$ و ... است.

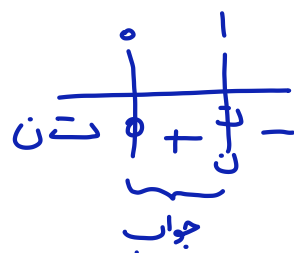
الف) $y = \sqrt{\frac{n}{\log_{\frac{1}{r}}^n}}$

$\log_{\frac{1}{r}}^n \rightarrow n > 0$

$\frac{n}{\log_{\frac{1}{r}}^n} \geq 0 \rightarrow n = 0$

(2)

$D = [0, 1)$

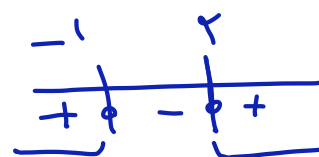


$\rightarrow y = \frac{\log_r^{(n^r - n - r)}}{\sqrt{n^r - 1} + 1}$

$n^r - n - r > 0 \rightarrow (n - r)(n + 1) > 0$

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

$\sqrt{n^r - 1} \neq -1$ (ممنوع برقراره!)



$\Rightarrow D = (-\infty, -1) \cup (r, +\infty)$

$r \log_n^a + \log_a^{\sqrt{n}} = r \quad n = 4 \quad a = ?$

(3)

$r \log_4^a + \log_a^r = r \rightarrow \frac{r}{r} \log_r^a + \log_a^r = r \rightarrow \frac{1}{t} + t = r$

$t^r - rt + 1 = 0 \rightarrow (t - 1)^r = 0 \rightarrow t = 1 \rightarrow \log_a^r = 1 \rightarrow a^1 = r \Rightarrow a = r$

$$\left(\log^{\frac{2}{r}}\right) n^r + (\log 4) n - \log 12 = 0$$

(K)

$$(\log 2 - \log r) n^r + (r \log r) n - (\log 2 + \log r) = 0$$

$$\log 2 = 1 - \log r \rightarrow \log 2 = 0,7$$

$$0,7 n^r + 0,1 n - 1,1 = 0 \rightarrow r n^r + 1 n - 11 = 0 \quad |\alpha - \beta| = \frac{\sqrt{\Delta}}{|a|} = \frac{\sqrt{4r + 11r^2}}{r}$$

$$\Rightarrow |\alpha - \beta| = \left\lceil \frac{1r}{r} \right\rceil$$

$$\log_{1r}^{10} = \frac{\log_r^{10}}{\log_r^{1r}} = \frac{\log_r^{\omega \times r}}{\log_r^{r \times r}} = \frac{\log_r^{\omega} + 1}{\log_r^r + 1} = \frac{\frac{10}{\omega} + 1}{r, n + 1} = \left\lceil \frac{r}{r, n} \right\rceil$$

(C)

$$\log_{12}^9 = \frac{\log_r^9}{\log_r^{12}} = \frac{\log_r^r + 1}{\log_r^{\omega} + \log_r^r} = \frac{1,9 + 1}{1,9 \times r, \omega} = \frac{r,9}{r} = \left\lceil \frac{1r}{r,0} \right\rceil$$

(4)

$$\log_r^{\omega} \times \log_r^r = \log_r^{\omega} = 1,9 \times 1,2$$

$$\log_n^{1n} = m \quad \log_r^{1r} = ?$$

(V)

$$\log_{r^r}^{r \times r} = \log_{r^r}^r + \log_{r^r}^{r^r} = \frac{1}{r} + \frac{r}{r} \log_r^r = m \rightarrow \frac{r}{r} \log_r^r = \frac{r_{m-1}}{r} \rightarrow \log_r^r = \frac{r_{m-1}}{r}$$

$$\log_{r^r}^{r \times r} = \frac{1}{r} \log_r^r + 1 \rightarrow \frac{1}{r} \times \frac{r_{m-1}}{r} + 1 \rightarrow \frac{r_{m-1} + r}{r} = \frac{r_{m+r}}{r} = \left\lceil \frac{r(m+1)}{r} \right\rceil$$

$$(0, r)^{r_{n-1}} = \left(\frac{1r\omega}{n}\right)^{n^r} \rightarrow \left(\frac{r}{\omega}\right)^{r_{n-1}} = \left(\frac{\omega^r}{r^r}\right)^{n^r} \rightarrow \left(\frac{\omega}{r}\right)^{1-r_n} = \left(\frac{\omega}{r}\right)^{r_{n^r}}$$

(^)

$$r n^r = 1 - r_n \rightarrow r n^r + r_n - 1 = 0 \rightarrow n = -1, n = \frac{1}{r}$$

$$\log_n^{(4n+1)} \xrightarrow{n=-1} \log_n^{(-1)} = x$$

$$\xrightarrow{n=\frac{1}{r}} \log_n^r = \left\lceil \frac{r}{r} \right\rceil$$

$$\log_b n = \frac{r}{r} (1+a)$$

$$\log_r r = a \rightarrow r = r^a$$

9

$$b = r^{(1+a)} = r^{r+r_a} = r \times \boxed{r^{r_a}} = r_q$$

↓
a

$$\log(r_x r_q - 1) = \log 100 = r$$

$$\frac{1}{a+b} = \log r \rightarrow \frac{r_a}{b} = \log r$$

$$\rightarrow \frac{b}{a} = r \log_r 10$$

$$r_a = b+c \xrightarrow{:a} r = \frac{b}{a} + \frac{c}{a}$$

10

$$r - r \log_r 10 = \frac{c}{a} \rightarrow -r \log_r 10 = \frac{c}{a}$$

$$\left(r^{-\frac{1}{a}}\right)^{-\log_r 10} = r^{\log_r 10} = \sqrt[r]{r_a}$$

$$= \sqrt[r]{10}$$