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$$D_f : I \cap \mathbb{I} : (-\infty, -1) \cup (1, +\infty)$$

$t=1$

مَدِينَة (2)

$$\rightarrow \log \frac{1}{2}$$

$$\log_4 9 = ? \quad \frac{\log 4}{\log 10} \quad \log_4 10 = \frac{\log 10}{\log 4} = \frac{1}{\log_4 10}$$

$$\log_4 10 = \frac{\log 10}{\log 4} = \frac{1}{\log_4 10} \Rightarrow \log_4 10 = \frac{1}{\log_4 10} \Rightarrow \log_4 10 = 1$$

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$$\log_n^m = m \quad \log_r^r = ? \quad \log_r^r + \log_r^r = \frac{1}{r} \log_r^r + 1 \Rightarrow \log_r^r = \frac{r-1}{r}$$

$$\log_r^r + \log_r^r = \frac{r}{r} \log_r^r + \frac{1}{r} = m \rightarrow \log_r^r = \left(m - \frac{1}{r}\right) \times \frac{r}{r} = \frac{rm-1}{r}$$

$$\Rightarrow \log_r^r = \frac{rm-1}{r}$$

$$\left(\frac{10}{a}\right)^{x^r} = \left(\frac{10}{a}\right)^{r-1} \quad \log_n^{(rn+1)}$$

$$\left(\frac{a}{r}\right)^{rx^r} = \left(\frac{a}{r}\right)^{-rn+1} \rightarrow rx^r = -rn+1 \rightarrow rx^r + rn - 1 = 0$$

$$\log_n^{rx^r+1} = \log_n^r = \frac{r}{r} \log_n^r = \frac{r}{r} \rightarrow \log_n^r = \frac{r}{r}$$

$$\log_r^r = a \quad \log_n^b = \frac{r}{r}(1+a) \quad \log_n^{(b-1)} = ?$$

$$\log_r^b = \frac{r}{r}(1+a) \rightarrow r^{(1+a)} = b \rightarrow r^r \times (r^a)^r = b \rightarrow b^{\frac{1}{r}}$$

$$\log_n^{(r^{\frac{1}{r}}(b-1))} = \log_n^{b-1} = r \Rightarrow \log_n^{b-1} = r$$

$$-2ax^r + bx + \frac{1}{r}c = 0 \rightarrow -\frac{a}{b} = \log_r^r \quad b+c = ra \quad \left(\frac{1}{r}\right)^{\frac{c}{a}} = \left(\frac{1}{r}\right)^{\log_r^r} = \frac{1}{a}$$

$$\frac{1}{b} = -\frac{2a}{b} = \left(\frac{2a}{b}\right) = \log_r^r \rightarrow \frac{a}{b} = \log_r^r$$

$$\frac{c}{b} = \frac{c}{a} = \frac{\log_r^r - 1}{\log_r^r} \rightarrow \frac{c}{a} = \frac{\log_r^r - 1}{\log_r^r} = \log_r^r \frac{1}{\log_r^r} = \log_r^r$$

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