

A یازدهم ریاضی

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آمار بنی خرد

① $\log_n^m \leq a$ $\log_{mn}^{m^2n} \leq b$ $a, b > 0$

$$\log_{mn}^{m^2n} + \log_{mn}^m \leq 1 + \frac{1}{\log_{mn}^m}$$

$$1 + \frac{1}{1+a} \leq b$$

از طرف چپ $\frac{1}{\log_{mn}^m}$ عددی

② در بخش x

الف) $y = \sqrt{\frac{x}{\log \frac{1}{x}}}$ $x > 0$ $\log \frac{1}{x} \neq 0 \rightarrow x \neq 1$

$\log \frac{1}{x} > 0 \rightarrow \frac{1}{x} > 1 \rightarrow x < 1$ ✓

استمرار $\rightarrow$

$\frac{x}{\log \frac{1}{x}} > 0 \rightarrow \frac{0}{-b+\frac{1}{x}} > 0$ $D_f \leq (0, 1)$

ب) $\log \frac{1}{x}$ $(x^2 - x - 2) \rightarrow 0$ $(x+1)(x-2) = 0$

$\frac{-1}{+b} - \frac{2}{-b} +$

$\sqrt{x^2 - 1} + 1$

$x^2 - 1 > 0 \rightarrow (x-1)(x+1) > 0 \rightarrow \frac{-1}{+b} + \frac{1}{+b}$

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

نتیجه

$D_f \leq (-\infty, -1) \cup (2, +\infty)$

subject

$$\mu \log_a x + \log_a \sqrt{x} \leq 1 \quad x \leq a \quad a \leq ? \quad (3)$$

$$\log_a \mu + \frac{1}{\log_a \mu} \leq 1 \quad \rightarrow K$$

$$K + \frac{1}{K} \leq 1 \rightarrow K^2 - K + 1 \leq 0 \quad (K-1)^2 \leq 0$$

$$\downarrow K \leq 1$$

$$\log_a \mu \leq 1 \rightarrow \mu' \leq a \leq \mu$$

$$\log 2 \approx 0.15 \quad \log 3 \approx 0.18 \quad (4)$$

اختلاف ریشه های معادله

$$\left(\log \frac{a}{\mu} \right) x^2 + (\log \mu) x - \log 12 \leq 0$$

$$\left(\log 2 - \log 3 \right) x^2 + \left(2 \times 0.18 \right) x - \left(\log 2 + \log 3 \right) \leq 0$$

$$\log \frac{10}{\mu} \rightarrow \log 10 - \log \mu \leq 1 - 0.15 \leq 0.15$$

$$0.15 x^2 + 0.18 x - 1.15 \leq 0 \rightarrow \mu x^2 + 11 x - 11 \leq 0$$

$$x^2 + 11x - 11 \leq 0 \quad (x-3)(x+11) \leq 0$$

$$\frac{\mu}{\mu} + \frac{11}{\mu} \leq \frac{15}{\mu}$$

$$\begin{array}{c} \mu \\ \downarrow \\ \mu \\ \downarrow \\ \mu \leq 1 \\ \downarrow \\ -\frac{11}{\mu} \end{array}$$

subject

$$\log \frac{r}{\omega} \leq 1/\omega \quad / \quad \log \frac{1}{\omega} \leq 0/\omega \quad / \quad \log \frac{1}{\omega} \leq ? \quad (\omega)$$

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

$$\log \frac{1}{r} \leq \frac{1}{r} + \log \frac{1}{\omega}$$

$$\log \frac{1}{r} \leq \frac{1}{r} + \log \frac{1}{\omega}$$

$$\frac{r}{\omega/\omega}$$

$$\log \frac{\omega}{r} \leq 1/\omega$$

$$\log \frac{r}{\omega} \leq 1/\omega$$

$$\log \frac{1}{\omega} \leq ? \quad (\omega)$$

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

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

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

$$\log \frac{1}{\omega} \leq \frac{1}{\omega} + \log \frac{1}{r}$$

$$\frac{r}{\omega} \leq \frac{1}{\omega}$$

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

$$\log \frac{r}{\omega} \leq ?$$

✓

$$\left(r \log \frac{r}{\omega} + \left(\frac{1}{r} \right) \log \frac{1}{\omega} \right) \leq \frac{r}{\omega} \rightarrow r \log \frac{r}{\omega} + 1 = r \log \frac{1}{\omega}$$

$$\log \frac{r}{\omega} \leq \frac{r}{\omega} - \frac{1}{r} + \log \frac{1}{\omega}$$

$$\log \frac{r}{\omega} \leq \frac{r}{\omega} + \frac{1}{r}$$

