

حساب ریاضی / تکلیف ۲۳ / یازدهم کلاس ریاضی

1

$$\log_m n = a \quad \log_m n = b$$

$$\log_{mn} m = \frac{1}{\log_m mn} = \frac{1}{\log_m m + \log_m n} = \frac{1}{1+a}$$

$$\log_{mn} n = \frac{1}{\log_m mn} = \frac{1}{\log_m m + \log_m n} = \frac{1}{1+a}$$

$$\log_{mn} m = \frac{1}{1+a} \quad \log_{mn} n = \frac{1}{1+a}$$

$$\log_{mn} m + \log_{mn} n = \frac{1}{1+a} + \frac{1}{1+a} = \frac{2}{1+a}$$

$$\log_{mn} m + \log_{mn} n = \frac{2}{1+a}$$

2

$$y = \sqrt{\frac{x}{\log \frac{x}{1/x}}} \rightarrow \frac{0}{0} \rightarrow 0 < x < 1 \rightarrow \text{Df} = (0, 1)$$

$$y = \log x \quad (x^2 - x - 2) \rightarrow x^2 - x - 2 = 0 \rightarrow (x-2)(x+1) = 0$$

$$x = 2 \quad x = -1$$

$$x^2 - 1 > 0 \rightarrow x < -1 \text{ or } x > 1$$

$$\text{Df} = (-\infty, -1) \cup (1, +\infty)$$

3

$$\log_a \sqrt{x} + 2 \log_a x = 2 \rightarrow \log_a x + 2 \log_a x = 2$$

$$3 \log_a x = 2 \rightarrow \log_a x = \frac{2}{3} \rightarrow x = a^{\frac{2}{3}}$$

4

$$\log_{10} 2 = 0.3$$

$$\log_{10} 3 = 0.48$$

$$\left(\log \frac{3}{2} \right)^x + \left(\log \frac{2}{3} \right)^x = \log 2 \rightarrow x^2 - x - 1 = 0 \rightarrow x = \frac{1 \pm \sqrt{5}}{2}$$

5

$$\log_2 18 = 4.177$$

$$\log_2 19 = 4.257$$

$$\log_2 18 = 4.177 \quad \log_2 19 = 4.257$$

$$\log \frac{\delta}{\mu} \approx 1.8 \rightarrow \frac{\log \frac{\delta}{\mu}}{\log \frac{\delta}{\mu}} \approx \frac{1 + \log \frac{\delta}{\mu}}{\log \frac{\delta}{\mu} + 1} \approx \frac{1 + \frac{1}{1.8}}{1.8 + 1} \approx \frac{1.55}{2.8} \approx 0.55$$

$$\log \frac{\mu}{\delta} \approx 1.4$$

$$\log \frac{\delta}{\mu} \approx 1.8$$

6

$$\log \frac{1}{\mu} \approx 2m \rightarrow \frac{1}{\mu} \log \frac{1}{\mu} \rightarrow \frac{1}{\mu} (1 + \log \frac{1}{\mu}) \approx 2m$$

$$\log \frac{1}{\mu} \approx 2m$$

$$\log \frac{1}{\mu} \approx 2m$$

$$\frac{1}{\mu} \log \frac{1}{\mu} \rightarrow \frac{1}{\mu} (1 + \log \frac{1}{\mu}) \rightarrow 1 + \frac{\mu - 1}{\mu} \rightarrow \frac{\mu + \mu - 1}{\mu}$$

1

$$\left(\frac{1 + \mu}{\mu} \right)^{\mu} = \left(\frac{1 + \mu}{\mu} \right)^{\mu - 1} \rightarrow \left(\frac{1 + \mu}{\mu} \right)^{\mu - 1} \approx \left(\frac{1 + \mu}{\mu} \right)^{\mu - 1} \rightarrow \mu - 1 - \mu + 1$$

$$\log (1 + \mu) \rightarrow 1 + \mu \log 1 + \mu \log \mu$$

$$\log (1 + \mu) \rightarrow 1 + \mu \log \mu$$

$$\log (1 + \mu) \rightarrow 1 + \mu \log \mu$$

$$\log (1 + \mu) \rightarrow 1 + \mu \log \mu$$

8

$$\log \frac{\mu}{\mu} \approx 2a$$

$$\log \frac{\mu}{\mu} \approx 2a$$

$$\log \frac{\mu}{\mu} \approx 2a$$

$$\log \frac{\mu}{\mu} \approx 2a$$

$$\log \frac{\mu}{\mu} \approx 2a$$

9

$$-Ea \mu^r + b \mu + \frac{1}{\mu} C_2$$

$$\log \mu \approx 2a$$

$$\log \mu \approx 2a$$

$$\log \mu \approx 2a$$

$$\log \mu \approx 2a$$

10

$$C + b \approx 1a$$

$$\left(\frac{1 + \mu}{\mu} \right)^{\mu} \rightarrow \left(\frac{1 + \mu}{\mu} \right)^{\mu} \rightarrow \left(\frac{1 + \mu}{\mu} \right)^{\mu} \rightarrow \left(\frac{1 + \mu}{\mu} \right)^{\mu} \rightarrow \left(\frac{1 + \mu}{\mu} \right)^{\mu}$$

$$\left(\frac{1 + \mu}{\mu} \right)^{\mu} \rightarrow \left(\frac{1 + \mu}{\mu} \right)^{\mu} \rightarrow \left(\frac{1 + \mu}{\mu} \right)^{\mu} \rightarrow \left(\frac{1 + \mu}{\mu} \right)^{\mu} \rightarrow \left(\frac{1 + \mu}{\mu} \right)^{\mu}$$