

۲۵: شماره اول

۲۶: شماره دوم

۲۷: شماره سوم

۱۸, ۱۷

$$1 - \log_c^{(a+b)} = y \Rightarrow \text{دیکه} \begin{cases} \sqrt{y} = 1 - \log_c^{-b} \Rightarrow c^{-1} = -b \Rightarrow b = -\frac{1}{c} \\ \sqrt{y} = 1 - \log_c^{-\frac{1}{c} - b} \Rightarrow b = -\frac{1}{c} \end{cases}$$

$$\Rightarrow -\frac{1}{c} + c = -\frac{1}{c} \Rightarrow c^2 + \frac{1}{c}c - 1 = 0 \Rightarrow c = \frac{1}{c} \checkmark \text{ یا } c = 1$$

$$\Rightarrow 1 - \log_{\frac{1}{c}}^{-\frac{1}{c} - b} = 0 \Rightarrow -\frac{1}{c} = -\frac{1}{c} \Rightarrow \sigma = 1 \Rightarrow (c+c)b = (1+\frac{1}{c}) - 2 = -\frac{1}{c} \checkmark$$

$$f(n) = 1 + C(n^{\sigma+h}) \Rightarrow \text{دیکه} \begin{cases} \sqrt{y} = 1 + Cn^{\sigma} \Rightarrow Cn^{\sigma} = \frac{1}{c} \\ \sqrt{y} = 1 + C(n^{\sigma+h}) \Rightarrow 1 + Cn^{\sigma} \times n^h \end{cases}$$

$$\Rightarrow b = 1$$

$$f(-1) = 1 + C \times (-1)^{\sigma-h} \Rightarrow 1 + C \times \frac{1}{c} \times \frac{1}{c} = 1 - \frac{1}{c} = \frac{1}{c} \checkmark$$

$$y = C + \log_{\omega}^{(a+b)} \Rightarrow \text{دیکه} \begin{cases} C + \log_{\omega}^b = y \\ \log_{\omega}^{y \times \omega + b} = -C \end{cases} \Rightarrow -\log_{\omega}^{y \times \omega + b} + \log_{\omega}^b = y$$

$$\Rightarrow \log_{\omega}^{\frac{b}{y \times \omega + b}} = y \Rightarrow \frac{y \times \omega + b}{b} = \frac{1}{y \omega} \Rightarrow \frac{y \times \omega}{b} = -\frac{y \omega}{y \omega} \Rightarrow \frac{\omega}{b} = -\frac{1}{\omega} \checkmark$$

$$|n^2 - 2| - n > 0 \Rightarrow \begin{cases} \frac{1}{2}n^2 - 2 > n \Rightarrow n^2 - n - 2 > 0 \\ n^2 - 2 < -n \Rightarrow n^2 + n - 2 < 0 \end{cases}$$

$$I \cup II = \mathbb{R} - [1, 2] = D_{f^{-1}}$$

$$\text{۱) دیکه: } \rightarrow -1 + (-2) + 1 = 0 \Rightarrow 2 + 2^{b-a} = 3 \Rightarrow b-a = 1 \Rightarrow b = 2 \checkmark$$

$$f^{-1}(1) = -1 \Rightarrow f(-1) = 1 \Rightarrow 2 + 2^{b+a} = 1 \Rightarrow b+a = 2 \Rightarrow a = 1 \checkmark$$

$$\Rightarrow 2(2) - 1 = 3 \checkmark$$

$$y = m^x - m \Rightarrow \begin{cases} x=1 \Rightarrow y=1 \Rightarrow -1 + \left(\frac{1}{p}\right)^{A+B} = 0 \Rightarrow -A-B=1 \\ x=2 \Rightarrow y=2 \Rightarrow -2 + \left(\frac{1}{p}\right)^{A+B} = 2 \Rightarrow -2A-B=2 \end{cases}$$

$$\Rightarrow A=-1, B=0 \Rightarrow f(x) = -1 + \left(\frac{1}{p}\right)^{-x} \Rightarrow -1+1 = 0 \quad \text{✓} \quad \textcircled{2} \quad \frac{4}{5}$$

$$m = m_0 \left(\frac{1}{q}\right)^t \Rightarrow \frac{1}{3} m_0 = m_0 \left(\frac{1}{q}\right)^t \Rightarrow \log \frac{1}{3} = \log \left(\frac{1}{q}\right)^t$$

$$\Rightarrow -\log 3 = t \log \frac{1}{q} \Rightarrow -\left(\log 3 + \log \frac{1}{q}\right) = t \left(\log \frac{1}{q} - \log \frac{1}{q}\right) \quad \text{✓} \quad \textcircled{2} \quad \frac{V}{5}$$

$$\log \frac{1}{3} = \frac{1}{1.5} \quad \log \frac{1}{q} = \frac{1}{1.5} \Rightarrow -\Delta t = -\frac{9\Delta}{1.5} \Rightarrow t = \frac{19}{1.5} \Rightarrow \frac{19}{1.5} \times 60 = 760 \text{ min} \quad \text{✓}$$

$$\frac{1.5\Delta}{100} = \frac{1}{\lambda} \Rightarrow \frac{1}{V} m_0 = m_0 \times \left(\frac{V}{\lambda}\right)^t \Rightarrow \frac{1}{V} = \left(\frac{V}{\lambda}\right)^t$$

$$\log \frac{1}{V} = \log \left(\frac{V}{\lambda}\right)^t \Rightarrow -\log V = \frac{t}{V} \log \frac{V}{\lambda} \Rightarrow -\log V = \frac{t}{V} \left(\log V - \log \frac{V}{\lambda}\right) \quad \text{✓} \quad \textcircled{2} \quad \frac{1}{5}$$

$$\log \frac{1}{V} = \frac{1}{1.5} \quad \log \frac{V}{\lambda} = \frac{10}{5} \Rightarrow \frac{t}{V} \times \frac{-\Delta}{1.5} = -\frac{\Delta}{1.5} \Rightarrow t = \Delta S \quad \text{✓}$$

$$100 - P = 9S \Rightarrow \frac{1}{100} m_0 = m_0 \times \left(\frac{9S}{100}\right)^t \Rightarrow \frac{1}{100} = \left(\frac{9S}{100}\right)^t$$

$$\Rightarrow \log \frac{1}{100} = \log \left(\frac{9S}{100}\right)^t \Rightarrow -\log 100 = t (\log 9S - \log 100)$$

$$-\frac{4.6}{100} = t \left(\log \frac{9S}{100} + \log \frac{1}{9S} - 1\right) \Rightarrow -\frac{4.6}{100} t = -\frac{4.6}{100} \Rightarrow t = 100 \quad \text{✓} \quad \textcircled{2} \quad \frac{9}{10}$$

