

سوال (۱) =

$$\log_n^m = a \cdot \log_{mn}^{m^n} = b, a > 0, [b] = ?$$

$$\log_{mn}^{m^n} = \frac{\log_n^{m^n}}{\log_n^{mn}} = \frac{\log_n^{m^n} + \log_n^n}{\log_n^m + \log_n^n} = \frac{ra + 1}{a + 1} = b$$

$$[b] \Rightarrow \left[\frac{ra+1}{a+1} \right] = \left[\frac{a}{a+1} \right] + 1 \Rightarrow [b] = 1$$

مقر

سوال (۲) =

$$y = \sqrt{\frac{x}{\log \frac{1}{x}}} \quad \left[\begin{array}{l} \log \frac{1}{x} > 0 \rightarrow \log \frac{1}{x} > 0 \rightarrow \frac{1}{x} > 1 \rightarrow x < 1 \\ x > 0, x \neq 1 \end{array} \right] \Rightarrow D_f = (0, 1)$$

مخرج و مخرجی نه

$$y = \frac{\log_f (x^2 - x - 2)}{\sqrt{x^2 - 1} + 1} \quad \left[\begin{array}{l} x^2 - x - 2 > 0 \rightarrow \frac{-1 \pm \sqrt{1+8}}{2} = \frac{-1 \pm 3}{2} \rightarrow x < -1 \text{ or } x > 2 \\ x^2 - 1 > 0 \rightarrow x > 1 \text{ or } x < -1 \\ \sqrt{x^2 - 1} \neq -1 \rightarrow \text{همیشه} \end{array} \right] \Rightarrow D_f = (-\infty, -1) \cup (2, +\infty)$$

سوال (۳) =

$$r \log_a^a + \log_a^{\sqrt{a}} = r, a = 9 \rightarrow a = ?$$

$$r \log_a^a + \log_a^{\sqrt{a}} = r \rightarrow \log_a^a + \log_a^{\sqrt{a}} = r \rightarrow \log_a^a + \frac{1}{\log_a^a} = r \rightarrow \log_a^a = t, t + \frac{1}{t} = r$$

$$x \rightarrow t^2 - rt + 1 = 0 \rightarrow (t-1)^2 = 0 \rightarrow t = 1 \rightarrow \log_a^a = t = 1 \rightarrow a = 3$$

سوال (۴) =

$$(\log \frac{10}{x})^2 + (\log 9)^2 - \log 10 = 0, \log x = 0, \log 2 = 0, \log 3 = 0$$

$$\log \frac{10}{x} = \log 10 - \log x \rightarrow (\log 10 - \log x)^2 + (\log 9)^2 - \log 10 = 0 \rightarrow \log 10 - \log x = \log 9 \rightarrow \log x = \log 10 - \log 9 = \log \frac{10}{9} \rightarrow x = \frac{10}{9}$$

$$(1 - a, 3 - a, 4) x^2 + a, 1 x - 1 + a, \frac{1}{x} = 0$$

$$= a, 4 x^2 + a, 1 x - 1, 1 = 0$$

$$x \rightarrow 4x^2 + 1x - 1 = 0 \rightarrow x = 1 \text{ or } x = \frac{1}{4}$$

$$\frac{11}{x} - 4 = \frac{1}{x}$$

سوال (۵) =

$$\log \frac{10}{x} = r, \log \frac{10}{x} = a, \log \frac{10}{x} = 1$$

$$\log \frac{10}{x} = \frac{\log \frac{10}{x}}{\log \frac{1}{x}} = \frac{\log \frac{10}{x} + \log x}{\log \frac{10}{x} + \log x} = \frac{1 + r}{1 + r, 1} = \frac{r}{r, 1}$$

$$\log \frac{10}{x} = \frac{1}{\log \frac{x}{10}} = r$$

$$\log_{\omega}^{\omega} = 1, \omega \quad \log_{\omega}^{\omega} = 1, \omega \quad \log_{\omega}^{\omega} = ?$$

سوال ٦

$$\log_{\omega}^{\omega} = \frac{\log_{\omega}^{\omega}}{\log_{\omega}^{\omega}} = \frac{\log_{\omega}^{\omega} + \log_{\omega}^{\omega}}{\log_{\omega}^{\omega} + \log_{\omega}^{\omega}} = \frac{\frac{\omega}{\omega} + 1}{1 + 1} = \frac{\frac{1}{\omega} + 1}{2} = \frac{1 + \omega}{2 \times \omega} = \frac{1 + \omega}{2 \times \omega}$$

$$\log_{\omega}^{\omega} = \frac{1}{\log_{\omega}^{\omega} \frac{1}{\omega}} = \frac{\omega}{1} \star$$

$$\log_{\omega}^{\omega} = m \quad \log_{\omega}^{\omega} = ?$$

سوال ٧

$$\log_{\omega}^{\omega} = \log_{\omega}^{\omega} = \log_{\omega}^{\omega} + \log_{\omega}^{\omega} = \frac{\omega}{\omega} \log_{\omega}^{\omega} + \frac{1}{\omega} \log_{\omega}^{\omega} = \frac{\omega}{\omega} \log_{\omega}^{\omega} + \frac{1}{\omega} = m \rightarrow \log_{\omega}^{\omega} = \frac{\omega(m - \frac{1}{\omega})}{\omega}$$

$$\log_{\omega}^{\omega} = \log_{\omega}^{\omega} = \log_{\omega}^{\omega} + \log_{\omega}^{\omega} = \frac{1}{\omega} \log_{\omega}^{\omega} + 1 = \frac{1}{\omega} \left(\frac{\omega(m-1)}{\omega} \right) + 1 = \frac{\omega(m-1)}{\omega} + 1 = \frac{\omega(m-1) + \omega}{\omega} = \frac{\omega m}{\omega}$$

$$(a/r)^{n-1} = \left(\frac{1}{r} \right)^{n-1} \cdot a^{n-1} \quad \log_{\omega}^{\omega} = ?$$

سوال ٨

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

$$r^{n-1} + \omega^{n-1} = 0 \rightarrow n = -1 \quad \text{أو} \quad n = \frac{1}{r} \quad \text{أو} \quad n = \frac{1}{\omega}$$

$$\log_{\omega}^{\omega} = \log_{\omega}^{\omega} = \log_{\omega}^{\omega} = \frac{r}{\omega} \log_{\omega}^{\omega} = \frac{r}{\omega}$$

$$\log_{\omega}^{\omega} = a \quad \log_{\omega}^{\omega} = \frac{r}{\omega} (1+a) \quad \log_{\omega}^{\omega} = ?$$

سوال ٩

$$\frac{1}{r} \log_{\omega}^{\omega} = \frac{r}{\omega} (1 + \log_{\omega}^{\omega}) \Rightarrow \frac{1}{r} \log_{\omega}^{\omega} = \frac{r}{\omega} (1 + \log_{\omega}^{\omega}) \Rightarrow \frac{1}{r} \log_{\omega}^{\omega} = \frac{r}{\omega} \log_{\omega}^{\omega} \rightarrow b = r \omega$$

$$\log_{\omega}^{\omega} = \log_{\omega}^{\omega} = \log_{\omega}^{\omega} = \frac{b}{r \omega} \quad \log_{\omega}^{\omega} = \frac{b}{r \omega}$$

$$\frac{1}{a} + \frac{1}{b} = \log_{\omega}^{\omega} \quad -ra + b + \frac{1}{r} C = 0 \quad a = \frac{b+C}{r} \quad \left(\frac{1}{r} \right) \frac{C}{a}$$

سوال ١٠

$$S = \frac{b}{a} = \frac{-b}{-fa} = \frac{b}{fa} \rightarrow \frac{fa}{b} = \log_{\omega}^{\omega} = r \log_{\omega}^{\omega} \rightarrow b = \frac{fa}{r \log_{\omega}^{\omega}} = r a \log_{\omega}^{\omega}$$

$$a = \frac{b+C}{r} \rightarrow C = r a - b \rightarrow r a - r a \log_{\omega}^{\omega} = r a (1 - \log_{\omega}^{\omega}) = r a (1 - \log_{\omega}^{\omega}) \rightarrow C = -r a \log_{\omega}^{\omega}$$

$$\left(\frac{1}{r} \right) \frac{C}{a} = \left(\frac{1}{r} \right) \frac{-r a \log_{\omega}^{\omega}}{a} = -\log_{\omega}^{\omega} = \log_{\omega}^{\omega} = \log_{\omega}^{\omega} = \log_{\omega}^{\omega}$$