

14, 17, 18

سارا ساسانی - یازدهم ریاضت A - تالیف شماره ۳۳

$$\log_n m = a$$

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

$$1 + \frac{a}{a+1} = b \xRightarrow{\text{برکت از دو طرف}} \left[1 + \frac{a}{a+1}\right] = [b] \Rightarrow 1 + \left[\frac{a}{a+1}\right] = [b] \Rightarrow [b] = 1$$

$$\sqrt[n]{\frac{n}{\log \frac{n}{\frac{1}{r}}}} \rightarrow n > 1 \quad \frac{n}{\log \frac{n}{\frac{1}{r}}} > 0 \quad \frac{0}{-0+0} \quad n \in (0, 1) \cup \Rightarrow \rho_f = (0, 1) \cup$$

$$\log \frac{n}{\frac{1}{r}} = 0 \Rightarrow n = 1$$

$$y = \frac{\log_r (n^r - n - r)}{\sqrt{n^r - 1} + 1} \Rightarrow n^r - n - r > 0 \Rightarrow (n-r)(n+1) > 0 \quad \frac{-1}{+1} \quad \frac{r}{-1} \quad n \in (-\infty, -1) \cup (r, +\infty) \cup$$

$$\sqrt{n^r - 1} + 1 \neq 0 \Rightarrow \sqrt{n^r - 1} \neq -1 \quad \text{جواب برقرار} \quad \sqrt{n^r - 1} = 0 \Rightarrow n^r - 1 = 0 \Rightarrow n^r = 1 \Rightarrow n \in (-\infty, -1) \cup (1, +\infty) \cup$$

$$\Rightarrow \rho_f = (-\infty, -1) \cup (r, +\infty) \cup$$

$$r \log_n a + \log_a \sqrt{n} = r \xrightarrow{n=9} r \log_9 a + \log_a 3 = r \Rightarrow \log_9 a + \log_9 a = r \Rightarrow \frac{1}{\log_9 a} + \log_9 a = r \Rightarrow \log_9 a = A$$

$$\frac{1}{A} + A = r \Rightarrow \frac{A^r + A}{A} = r \Rightarrow A^r - A = 0 \Rightarrow A = 0 \rightarrow \log_9 a = 0 \quad \text{غیر ممکن} \quad A = 1 \rightarrow \log_9 a = 1 \Rightarrow a = 9$$

$$\log_9 9 = 0, 1, r$$

$$\log_9 9 = 0, 1, r$$

$$(\log_9 \frac{1}{9}) n^r + (\log_9 9) n - \log_9 1 = 0 \Rightarrow \log_9 \frac{1}{9} = \log_9 1 - \log_9 9 = \log_9 1 - 0, 1, r = (\log_9 1 - \log_9 9) - 0, 1, r = 0, 1, r$$

$$\log 9 = \log 3^2 = 2 \log 3 = 0,18$$

$$\log 12 = \log 3 \times 4 = \log 3 + \log 4 = \log 3 + (\log 10 - \log 5) = 1,1$$

$0,18 \quad 1 - 0,13 = 0,18$

$$y = 0,13x^2 + 0,18x - 1,1 = 0$$

$$\Delta = 1,96 \quad |x - \beta| = \frac{\sqrt{\Delta}}{|a|} = \frac{1,4}{0,13} = \frac{14}{13}$$

$$\log 4 \approx 0,18$$

$$\log 2 = 0,12$$

$$\log 10 = ?$$

$$\log \frac{10}{14} = \frac{\log 10}{\log 14} = \frac{\log 10}{\log 2 + \log 7} = \frac{1}{0,18 + 0,24} = \frac{1}{0,42} = \frac{12}{19}$$

$$\log 2 = \frac{1}{\log 5} = \frac{1}{0,12} = 8$$

$$\log 2 \approx 0,12$$

$$\log 4 = 0,18$$

$$\log 7 = ?$$

$$\log 7 = \frac{\log 4}{\log 2} = \frac{0,18}{0,12} = \frac{3}{2} = 1,5$$

$$\log 2 = \frac{1}{\log 5} = \frac{1}{0,12} = 8,33$$

$$\log \frac{1}{n} = m \Rightarrow \log \frac{1}{n^r} = m \Rightarrow \frac{1}{r} \log \frac{1}{n} = m \Rightarrow \log \frac{1}{n} = rm \Rightarrow \log \frac{1}{n} = rm \Rightarrow \log 9 + \log 2 = rm$$

$$\log 2^r = rm - 1 \Rightarrow r \log 2 = rm - 1 \Rightarrow \log 2 = \frac{rm - 1}{r}$$

$$\log \frac{1}{r} = \frac{\log 1}{\log r} = \frac{\log 1 + \log 2}{\log 2} = \frac{0 + \log 2}{\log 2} = \frac{\log 2}{\log 2} = 1$$

$$\left(\frac{r}{10}\right)^{rm-1} = \left(\frac{a}{r}\right)^{rm} \Rightarrow \left(\frac{r}{a}\right)^{rm-1} = \left(\frac{a}{r}\right)^{rm} \Rightarrow \left(\frac{a}{r}\right)^{1-rm} = \left(\frac{a}{r}\right)^{rm} \Rightarrow rm = 1 - rm \Rightarrow$$

$$rm + rm - 1 = 0 \quad \Delta = 19 \quad \frac{-r \pm \sqrt{r^2 - 4 \cdot 1 \cdot (-1)}}{2 \cdot 1} = \frac{-r \pm \sqrt{r^2 + 4}}{2}$$

$$\log \frac{1}{n+1} = \log \frac{1}{n} = \log \frac{1}{r} = \frac{1}{r} \log \frac{1}{n} = \frac{1}{r} \log \frac{1}{n}$$

$$\log_r r = a$$

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$$\log_r b = \frac{r}{r}(1+a) \Rightarrow \log_r b = \frac{r}{r}(1+a) \Rightarrow \log_r b = \frac{r}{r}(1+a) \Rightarrow \log_r b = r(1+a) \Rightarrow$$

$$\log_r b = \underbrace{r}_{\log_r r} + r \log_r r \Rightarrow \log_r b = \log_r r + \log_r r \Rightarrow \log_r b = \log_r r^2 \Rightarrow b = r^2$$

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$$\log(r^2 - 1) = \log(100 - 1) = \log 100 = 2$$

$$\frac{1}{s} = -\frac{a}{b} \Rightarrow \frac{r_a}{b} = \log r \Rightarrow \frac{r_a}{b} = \log r \Rightarrow \frac{r_a}{b} = \log r \Rightarrow \frac{a}{b} = \frac{\log r}{r} \quad (1)$$

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$$\frac{b+c}{r} = a \Rightarrow c = ra - b$$

$$\frac{c}{a} = \frac{ra-b}{a} = r - \frac{b}{a} \stackrel{(1)}{\Rightarrow} r - \frac{r}{\log r} = r \left(1 - \frac{1}{\log r}\right) = r - r \log_r 10$$

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$$\left(\frac{1}{r}\right)^{r - \log_r 10} \Rightarrow \left(r^{-\frac{1}{r}}\right)^{r - \log_r 10} = \left(r^{-\frac{1}{r}}\right)^{r(1 - \log_r 10)} = r^{-\frac{1}{r}(1 - \log_r 10)} =$$

$$r^{-\frac{1}{r}(\log_r r - \log_r 10)} = r^{-\frac{1}{r}(\log_r 10)} = r^{(\log_r \frac{10}{r})} = r^{(\frac{1}{r} \log_r 10)} = \omega^{(\frac{1}{r} \log_r 10)}$$

$$\omega^{\frac{1}{r}} = \sqrt[r]{\omega}$$