۱۹,۷۵

Date : Year: Month: Day:

ستاسیس عودف زاد یازدهم رصد A تالیف : ۲۴

$f(x) = a^{Ax+B}$ $\quad y = x^2$ $\quad (1, y)$ $\quad (2, y')$ (۱

$y = 1 \quad a^{A+B} = 1 \rightarrow A+B = 0 \rightarrow A = -B$ (۲

$a^{2A+B} = 9 \rightarrow a^{2A} + B = 2 \rightarrow -2B = 2 \rightarrow B = -1 \rightarrow A = 1$

$f(x) = a^{x-1} \rightarrow$ محل برخورد با محور y ها : $a^{0-1} = \frac{1}{a}$

5

$\log_2^{(4^n+15)} = n+2 \rightarrow 2^{n+2} = 4^n + 15 \rightarrow 4 \times 2^n = 2^{2n} + 15$ (۱,۷۵) (۴

$\rightarrow 2^{2n} - 4 \times 2^n - 15 = 0 \xrightarrow{2^n = a} a = 5 \text{ یا } -3 \rightarrow n = \log_2^5$

$4^n + 15 > 0 \rightarrow \checkmark$

$(\log_{21}^3)^2 + \log_{21}^{147} \times \log_{21}^{343} = (\log_{21}^3)^2 + (\log_{21}^{147})^2 + 2\log_{21}^{147} \times \log_{21}^7$ (۵

$147 = 3 \times 49$ $\quad = (\log_{21}^3)^2 + (\log_{21}^{147})^2 + 2(\log_{21}^{147} \times \log_{21}^7)$

$147 \times 343 = 9 \times 147$ $\quad = (\log_{21}^3 + \log_{21}^{147})^2 = (\log_{21}^{441})^2 = 2^2 = 4$

$\log(n^2 - 2n + 1) + 2\log(1-n) - 2 = 0$ $\quad 1-n > 0 \rightarrow n < 1$ ✓ $\quad n < 0$ ✓ $\quad \log_5^{-n} = 2$ (۴

$\log(n-1)^2 + 2\log(1-n) - 2 = 0$

$2\log(1-n) = 2 \rightarrow \log(1-n) = 1 \rightarrow 10 = 1-n \rightarrow -n = 9$ (۵

$\rightarrow \log_5^{-n} = \log_5^9 = 2$

$\log_2^{(4n^2+12n+8)} + \log_4^{(n-6)} = 4 \rightarrow$ $\quad n > 2$ (۵

$\log_2^{(n^2+12n+8)(n-6)} = \log_2^8 \rightarrow n^3 - 8 = 8 \rightarrow n^3 = 16 \rightarrow n = \sqrt[3]{16}$ (۲

$\rightarrow \log_{2\sqrt{2}}^{\sqrt[3]{16}} = \log_{2^{\frac{3}{2}}}^{2^{\frac{4}{3}}} = 4$

$\div$

$\log(2-n) - \log\frac{2}{(n-6)^2} = 2$ $\quad \log_{\sqrt{2}}^{-n} = ?$ (۴

$(2-n)^2 = 16 \rightarrow 4 - n = 16 \rightarrow -n = 12 \rightarrow \log_{\sqrt{2}}^{12} = 4 \times 2 = 8$ (۵

parsian

Subject

Date : Year Month Day

۱۷ $3^{x^2-x} = 81^{x}$ $\log_4^{(x-1)} = ?$

$3^{x^2-x} = 3^{4x} \rightarrow x^2 - 4x - 2 = 0 \rightarrow (x-2)^2 - 4 = 0 \rightarrow (x-2) = \sqrt{4}$

$\rightarrow \log_4^{(x-2)} = \log_4^{\sqrt{4}} = \frac{1}{2}$

۱۸ $\log_{12}^{2} = \frac{\omega}{\Lambda}$ $\log_{18}^{\Lambda} = ? = \log_{2\times 9}^{2^2} = 2\log_{18}^{2} = \frac{2}{\log^{18}}$

$= \frac{2}{\log_2^2 + \log_2^9} = \frac{2}{1 + 2\log_2^3} = \frac{2}{1 + 2\frac{1\Lambda}{5}} = \frac{2}{1 + \frac{14}{5}} = \frac{2\times 5}{24} = \frac{5}{12}$ ✓

۱۹ $\log_{12}^{2} = 0.1\Lambda$ $\log_{12}^{9} = ?$

$\log_2^{10} = 1.4 = \frac{\Lambda}{5}$

$= \frac{\log_2^9}{\log_2^{12}} = \frac{1 + \log_2^2}{\log_2^9 + 1} = \frac{1 + \frac{\Lambda}{5}}{2 + \frac{\Lambda}{5}}$

$\Rightarrow \frac{13}{18}$

۱۱۰ $(a\log 2)x^2 + ax + b\log 2 = 0$ $x = -1$ ✓ $(\sqrt{2})^{\frac{b}{a}} = ?$

$a\log 2 - a + b\log 2 = 0 \xrightarrow{\div a} \log 2 - 1 + \frac{b}{a}\log 2 = 0$

$\log 2^{\frac{b}{a}} = -\log 2 + \log 10 = \log \frac{1}{2}\times 10 = \log 5$

$\rightarrow 2^{\frac{b}{a}} = 5 \rightarrow (2^{\frac{b}{a}})^{\frac{1}{2}} = 5^{\frac{1}{2}} = \sqrt{2}^{\frac{b}{a}} = \sqrt{5}$