Subject:
Date

۱۹,۷۵

تالیف سی و پنج

۱۵ بلدالرئیس

۱- $(0,2) \Rightarrow 2 = 1 - \log_c^{-b} \Rightarrow \log_c^{-b} = -1 \Rightarrow -b = \frac{1}{c} \rightarrow c - \frac{1}{c} = -\frac{3}{2} \Rightarrow 2c^2 + 3c - 2 = 0 \rightarrow c = \frac{1}{2}$ ✓ , $c = -4$ ✗

$\Rightarrow b = -(\frac{1}{2}) = -2$

$(-1.5, 0) \Rightarrow y = 1 - \log_{2^{-1}}^{(-1.5a+2)} = 0 \Rightarrow \log_2^{(-1.5a+2)} = -1 \Rightarrow -1.5a + 2 = 0.5 \Rightarrow 2a = 2 \Rightarrow a = 1$

$(a+c)b = (\frac{1}{2} + 1) \times (-2) = -3$

۲- $(0, \frac{2}{3}) \Rightarrow 1 + c \times 3^a = \frac{2}{3} \Rightarrow c \times 3^a = -\frac{1}{3} = -1 \times \frac{1}{3} \Rightarrow c = -1 \ , \ a = -1$

$(1,0) \Rightarrow 1 - 1 \times 3^{b-1} = 0 \Rightarrow 3^{b-1} = 1 \Rightarrow b - 1 = 0 \Rightarrow b = 1$

$f(-1) = 1 - 1 \times 3^{-1-1} = 1 - \frac{1}{9} = \frac{8}{9}$

۳- $(0,2) \rightarrow c + \log_a^b = 2 \Rightarrow c = 2 - \log_a^b \Longrightarrow y = 2 - \log_a^b + \log_a^{ax+b}$

$(2,4.5) \rightarrow \log_a^{2a} - \log_a^b + \log_a^{2.4a+b} = 0 \rightarrow \log_a^b - \log_a^{2a} = \log_a^{2.4a+b} \Rightarrow \frac{b}{2a} = \frac{12}{5}a + b$

$\Rightarrow -\frac{2.4}{2a} b = \frac{12}{5} a \rightarrow \frac{a}{b} = \frac{-2.4}{\frac{12}{5}} = -\frac{2}{5} = -0.4$

۴- $\log_4^{(|x^2-2|-x)} \Rightarrow |x^2-2| - x > 0$ ① $\rightarrow x^2 - 2 > x \Rightarrow x^2 - x - 2 > 0$ (−1 , 2)

② $\rightarrow x^2 - 2 < -x \Rightarrow x^2 + x - 2 < 0$ (−2 , 1)

$\cup \Longrightarrow (-\infty, 1) \cup (2, +\infty)$

۵- $g(1) = -1 - 3 + 8 = 4 \Rightarrow f(1) = 2 + 2^{b-a} = 4 \Rightarrow b - a = 1 \Rightarrow b = 1 + a$

$f^{-1}(10) = -1 \Rightarrow f(-1) = 10 = 2 + 2^{a+b} \Rightarrow 2^{2a+1} = 8 \Rightarrow 2a + 1 = 3 \Rightarrow a = 1 \rightsquigarrow b = 2$

$2b - a = 4 - 1 = 3$

۶- $y_1 = 1 - 1 = 0 \quad f(1) = -2 + (\frac{1}{2})^{A+B} = 0 \Rightarrow (\frac{1}{2})^{A+B} = 2 \Rightarrow A + B = -1$

$y_2 = 4 - 2 = 2 \quad f(2) = -2 + (\frac{1}{2})^{2A+B} = 2 \Rightarrow (\frac{1}{2})^{2A+B} = 4 \Rightarrow 2A + B = -2$

$\Rightarrow \begin{cases} A = -1 \\ B = 0 \end{cases}$

$f(2) = -2 + (\frac{1}{2})^{-3} = 4$

Subject:
Date

۷- $\frac{1}{4}m = (\frac{8}{9})^t m \Rightarrow \log_{\frac{8}{9}} \frac{1}{4} = \frac{\log_5 4^{-1}}{\log_5 \frac{8}{9}} = \frac{-(\log_5^2 + \log_5^3)}{3\log_5^2 - 2\log_5^3} = \frac{\frac{10}{24} + \frac{10}{14}}{\frac{20}{14} - \frac{30}{24}}$ (۶)

$\log_2^5 = \frac{24}{10} \Rightarrow \log_5^2 = \frac{10}{24}$

$\log_3^5 = \frac{14}{10} \Rightarrow \log_5^3 = \frac{10}{14}$

$= \frac{140 + 240}{480 - 420} = \frac{19}{3} h \times 40 = 380 min$

۸- $100 - 12/5 = 87/5 \Rightarrow (\frac{87/5}{100})^t m = \frac{1}{7} m \Rightarrow t = \log_{\frac{7}{8}} \frac{1}{7} = \frac{-\log 7}{\log 7 - 3\log 2}$ (۶)

$\log_7^2 = 0/4 \Rightarrow \log_3^7 = \frac{10}{4}$

$\log_2^3 = 1/4 \Rightarrow \log_3^2 = \frac{10}{14}$

$= \frac{-\frac{10}{4}}{\frac{10}{4} - \frac{30}{14}} = 8$ سنه $\times 7 = 56$ روز!

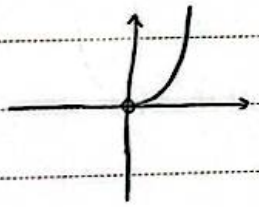
۹- $100 - 4 = 96 \Rightarrow \frac{1}{3} x = (\frac{96}{100})^t x \Rightarrow \log_{0/96}^{\frac{1}{3}} = \frac{\log 3^{-1}}{\log 96 - \log 100} = \frac{-\log 3}{\log 3 + 5\log 2 - 2}$ (۶)

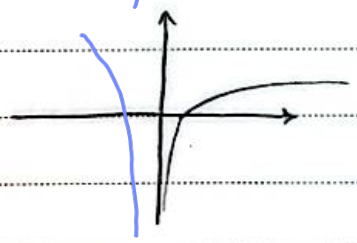
$= \frac{-0/48}{0/48 + 1/5 - 2} = \frac{-0/48}{-0/02} = 24$ روز!

۱۰- $\begin{array}{c|cccc} x & 10 & 100 & 1000 & \\ \hline y & 2 & 4 & 4 & \end{array}$ (۱/۷۵)

ب) $\log x^2 = 2\log x$

$D = \mathbb{R} - \{0\}$





ج) $y = 9^{\log_3^x} = x^{\log_3^9} = x^2$

$x > 0$

PAPCO