نام و نام خانوادگی ..... پاسخنامه تشریحی تکلیف شماره ۲۸ ... کلاس ...

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$1-\log_c^{-1/2a-b}=0 \quad -1/2a-b=c$

$1-\log_c^{-b}=2$

$-\frac{3}{2}a=b+c \quad -\frac{3}{2}a=-\frac{3}{2} \quad a=1$

$\log_c^{-b}=-1 \quad -b=\frac{1}{c}$

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

$bc=-1$

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$f(1)=0 \Rightarrow 1+c\times 3^{a+b}=0 \Rightarrow c\times 3^a\times 3^b=-1$

$f(0)=\frac{7}{3} \Rightarrow 1+c\times 3^a=\frac{7}{3} \Rightarrow c\times 3^a=-\frac{1}{3}$

$\frac{c\times 3^a\times 3^b}{c\times 3^a}=3 \Rightarrow 3^b=3 \Rightarrow b=1$

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

۳

$\begin{cases}2=\\ 0=c+\log_5^{(2/4a+b)}\end{cases} \quad -\log_5^b=-2 \Rightarrow \log_5^{\frac{2/4a+b}{b}}=-2$

$\Rightarrow \frac{2/4a+b}{b}=5^{-2} \Rightarrow \frac{2/4a+b}{b}=\frac{1}{25} \Rightarrow \frac{2/4a}{b}+1=\frac{1}{25} \Rightarrow \frac{24}{10}\times\frac{9}{b}=-\frac{24}{25}$

$\Leftarrow \frac{9}{b}=\frac{3}{-2}$

۴

$|x^2-2|-x>0 \quad -\sqrt{2}<x<\sqrt{2} \quad x\le -\sqrt{2} \text{ یا } x\ge\sqrt{2}$

$1\le x^2\le 2$

$\begin{cases}-x^2+2-x>0\\ x^2-2-x>0\end{cases} \quad -1\le x\le 2 \cup x\ge 2$

$D_f=(-\infty,-1)\cup(2,+\infty)$

۵

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

$g(1)=-1-3+8=4$

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

$\begin{cases}b+a=3\\ b-a=1\end{cases} \begin{cases}b=2\\ a=1\end{cases} \rightarrow 2b-a=4-1=3$

۶

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

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

$x=1 \longrightarrow y = 1-1 = 0$

$x=2 \longrightarrow y = 4-2 = 2$

$A+B = -1$, $2A+B = -2$ $\Rightarrow A=-1$, $B=0$

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

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

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

$f(2) = -2 + (\frac{1}{2})^{-2} = -2 + 8 = 6$

۷

$m(t) = m_0(\frac{4}{9})^t \Rightarrow \frac{1}{6} m_0 = m_0(\frac{4}{9})^t \Rightarrow (\frac{4}{9})^t = \frac{1}{6}$

$\log_{\omega}(\frac{4}{9})^t = \log_{\omega}\frac{1}{6} \Rightarrow t\log_{\omega}\frac{4}{9} = -\log_{\omega}6$, $\log_{\omega}^{2} = 1,6 = \frac{8}{5} \Rightarrow \log_{\omega}^{3} = \frac{8}{8}$

$\log_{\omega}^{2} = 2,6 \Rightarrow \log_{\omega}^{2} = \frac{8}{12}$, $t\log_{\omega}^{(\frac{4}{9})} = -\log_{\omega}^{6} \Rightarrow t(\log_{\omega}^{4} - \log_{\omega}^{9}) = -(\log_{\omega}^{2} + \log_{\omega}^{3})$

$\Rightarrow t(2\times\frac{8}{12} - 2\times\frac{8}{8}) = -(\frac{8}{12} + \frac{8}{8}) \Rightarrow t(\frac{16-8\omega}{24}) = -(\frac{24+8\omega}{24}) \Rightarrow t = \frac{19}{3}\times 6 = 38$

۸

$m(t) = m_0(\frac{7}{8})^{\frac{t}{2}} \Rightarrow \frac{1}{7} m_0 = m_0(\frac{7}{8})^{\frac{t}{2}} \Rightarrow (\frac{7}{8})^{\frac{t}{2}} = \frac{1}{7}$

$\log(\frac{7}{8})^t = \log_3^{\frac{1}{7}} \Rightarrow \frac{t}{2}\log_3^{\frac{7}{8}} = \log_3^{\frac{1}{7}} \Rightarrow \frac{t}{2}(\log_3^7 - \log_3^8) = -\log_3^7$

$\log_7 = 0,8 \Rightarrow \log_3^7 = \frac{8}{3}$, $\log_2 = 1,6 \Rightarrow \log_3^2 = \frac{8}{5}$

$\frac{t}{2}(\frac{8}{3} - 3\times\frac{8}{5}) = -\frac{8}{3} \Rightarrow \frac{t}{2}(\frac{40-24}{15}) = -\frac{8}{3}$, $\frac{t}{2}(\frac{-8}{15}) = -\frac{8}{3} \Rightarrow t = 15$

۹

$f(t) = A(\frac{96}{100})^t \Rightarrow \frac{A}{3} = A(\frac{96}{100})^t \Rightarrow (\frac{96}{100})^t = \frac{1}{3}$

$\Rightarrow \log(\frac{96}{100})^t = \log\frac{1}{3} \Rightarrow t(\log^{96} - \log^{100}) = -\log^3$

$\Rightarrow t(\log^{2^5\times 3} - 2) = -\log^3 \Rightarrow t(\log^{2^5} + \log^3 - 2) = -\log^3$

$\Rightarrow t(1,5 + 0,48 - 2) = -0,48 \Rightarrow -0,02t = -0,48 \Rightarrow t = 24$

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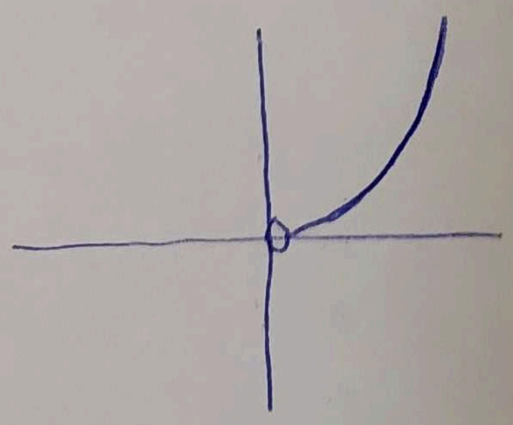
الف) $x>0$ $y = 9^{\log_3^x} = x^{\log_3^9}$



ب) $x^2 > 0 \Rightarrow x<0$ و $x>0$