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نام و نام خانوادگی ......امیرعلی منصوری...... پاسخنامه تشریحی تکلیف شماره ۲۵.... کلاس یازدهم ریاضی A......

۱	(۲)	$1-\log_c^{-1/5a-b}=0$ $\quad -1/5a-b=c$ $-\frac{3}{2}a=b+c$ $\quad -\frac{3}{2}a=-\frac{3}{2}$ $\quad a=1$ ✓ $1-\log_c^{-b}=2$ $\log_c^{-b}=-1$ $\quad -b=\frac{1}{c}$ $\quad (a+c)b=\frac{3}{2}\times-2=-3$ ✓ $bc=-1$
۲	(۲)	$f(1)=0 \Rightarrow 1+c\times 3^{a+b}=0 \Rightarrow c\times 3^a\times 3^b=-1$ $f(0)=\frac{2}{3} \Rightarrow 1+c\times 3^a=\frac{2}{3} \Rightarrow c\times 3^a=\frac{-1}{3}$ $\frac{c\times 3^a\times 3^b}{c\times 3^a}=3 \Rightarrow 3^b=3 \Rightarrow b=1$ $f(-1)=1+c\times 3^a\times 3^{-b}=1+(\frac{-1}{3})\times\frac{1}{3}=1-\frac{1}{9}=\frac{8}{9}$ ✓
۳	(۲)	$\begin{cases} 2= \\ 0=c+\log_5(2/4a+b) \end{cases}$ $\quad -\log_5 b=-2 \Rightarrow \log_5\frac{2/4a+b}{b}=-2$ $\Rightarrow \frac{2/4a+b}{b}=5^{-2} \Rightarrow \frac{2/4a+b}{b}=\frac{1}{25} \Rightarrow \frac{2/4a}{b}+1=\frac{1}{25} \Rightarrow \frac{24}{10}\times\frac{a}{b}=-\frac{24}{25}$ $\frac{-2}{5}=\frac{a}{b}$ ✓
۴	(۲)	$\lvert x^2-2\rvert-x>0$ $\quad -\sqrt{2}<x<\sqrt{2}$ $\quad x\le-\sqrt{2}$ یا $x\ge\sqrt{2}$ $-2\le x\le 1$ $\begin{cases} -x^2+2-x>0 \\ x^2-2-x>0 \end{cases}$ $\quad D_f=(-\infty,1)\cup(2,+\infty)$ ✓ $\quad x\ge2 \cup x\le-1$
۵	(۲)	$f(1)=2+2^{b-a} \Rightarrow 2+2^{b-a}=4 \Rightarrow 2^{b-a}=2 \Rightarrow b-a=1$ $g(1)=-1-3+8=4$ $f^{-1}(10)=-1 \Rightarrow f(-1)=10 \Rightarrow 2+2^{b+a}=10 \Rightarrow 2^{b+a}=2^3 \Rightarrow b+a=3$ $\left.\begin{array}{l} b+a=3 \\ b-a=1 \end{array}\right\} \begin{array}{l} b=2 \\ a=1 \end{array}$ ✓ $\longrightarrow 2b-a=4-1=3$ ✓

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

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

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

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

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

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

$\Rightarrow A+B = -1$

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

$\Rightarrow 2A+B = -2$

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

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

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

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

$\log_2 3 = 1,6 = \frac{8}{5} \Rightarrow \log_3 5 = \frac{5}{8}$

$\log_2 12 = 3,6 \Rightarrow \log_{12} 3 = \frac{5}{11}$

$t \log_3 (\frac{4}{9}) = -\log_3 6 \Rightarrow t(\log_3 4 - \log_3 9) = -(\log_3 2 + \log_3 3)$

$\Rightarrow t(2 \times \frac{5}{11} - 2 \times \frac{5}{8}) = -(\frac{5}{11} + \frac{5}{8}) \Rightarrow t(\frac{30-55}{88}) = -(\frac{30+55}{88}) \Rightarrow t = \frac{19}{3} \times 6 = 38$ ✓

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$m(t) = m_0 (\frac{8}{27})^{\frac{t}{3}} \Rightarrow \frac{1}{8} m_0 = m_0 (\frac{8}{27})^{\frac{t}{3}} \Rightarrow (\frac{8}{27})^{\frac{t}{3}} = \frac{1}{8}$

$\log_3 (\frac{8}{27})^{\frac{t}{3}} = \log_3 \frac{1}{8} \Rightarrow \frac{t}{3} \log_3 \frac{8}{27} = \log_3 \frac{1}{8} \Rightarrow \frac{t}{3} (\log_3 8 - \log_3 27) = -\log_3 8$

$\log_3 2 = 0,6 \Rightarrow \log_3 8 = \frac{3}{5}$

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

$\frac{t}{3} (\frac{3}{5} - 3 \times \frac{5}{8}) = -\frac{3}{5} \Rightarrow \frac{t}{3} (\frac{24-75}{40}) = -\frac{3}{5} \Rightarrow -\frac{17}{40} t = -\frac{3}{5} \Rightarrow t = 9.4$ ✓

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$f(t) = A (\frac{96}{100})^t \Rightarrow \frac{A}{2} = A (\frac{96}{100})^t \Rightarrow (\frac{96}{100})^t = \frac{1}{2}$

$\Rightarrow \log (\frac{96}{100})^t = \log \frac{1}{2} \Rightarrow t(\log 96 - \log 100) = -\log 2$

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

$\Rightarrow t(1,5 + 0,48 - 2) = -0,301 \Rightarrow -0,02 t = -0,301 \Rightarrow t = 24$ ✓

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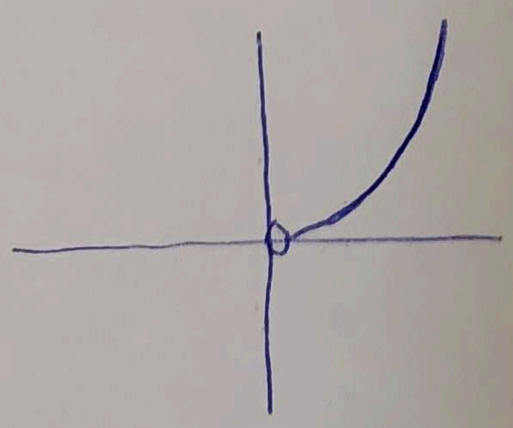
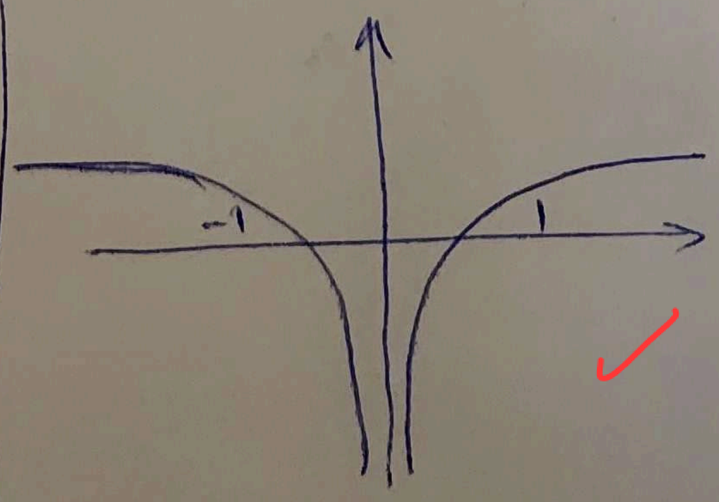
الف) $x > 0 \quad y = 9^{\log_3 x} = x^{\log_3 9}$



ب) $x^2 > 0 \Rightarrow x < 0$ و $x > 0$



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