نام و نام خانوادگی ......[illegible]...... پاسخنامه تشریحی تکلیف شماره ...۲۵... کلاس ...یازدهم ریاضی...

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$(0,2)\ (-\frac{3}{2},0)$ $\quad (a+c)b=-3 \quad b+c=-\frac{3}{2} \quad y=1-\log_c^{(ax-b)}$

$y=1-\log_c^{(ax-b)} \xrightarrow[(0,2)]{(-\frac{3}{2},0)} 1-\log_c^{-b}=2 \to \log_c^{-b}=-1 \to c^{-1}=-b \to \frac{1}{c}=b$

$y=1-\log_c^{-\frac{3}{2}a-b}=0 \to \log_c^{-\frac{3}{2}a-b}=1 \to c+b=-\frac{3}{2}a \to a=1$

$-\frac{1}{c}+c=\frac{c^2-1}{c}=-\frac{3}{2} \to 2c^2-2=-3c \leadsto c=\frac{1}{2}$ ق ق $,\ b=-2$ غ ق

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$(0,\frac{2}{3}),(1,0) \quad f(x)=1+c\times 3^{a+bx} \xrightarrow{(0,\frac{2}{3})} 1+3^a c=\frac{2}{3} \to c\times 3^a=-3^{-1}$

$\to c=-1,\ a=-1$ $\quad \xrightarrow{(1,0)} 1-1\times 3^{-1+b}=0 \quad 1=3^{-1+b} \to -1+x=0 \to b=1$

$\leadsto f(x)=1-3^{-1+x} \to f(-1)=1-3^{-2}=\frac{8}{9}$ $\quad (3^{-2}=\frac{1}{9})$

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$(0,2)(2.4,0) \xrightarrow[(2.4,0)]{(0,2)} 2=c+\log_5^b,\ -c=\log_5^{2.4a+b} \quad y=c+\log_5^{ax+b}$

$\log_5^b-\log_5^{2.4a+b}=2 \to \log_5^{\frac{b}{2.4a+b}}=2 \quad \frac{b}{2.4a+b}=25$

$\leadsto 24b=-60a \to \frac{a}{b}=-0.4$

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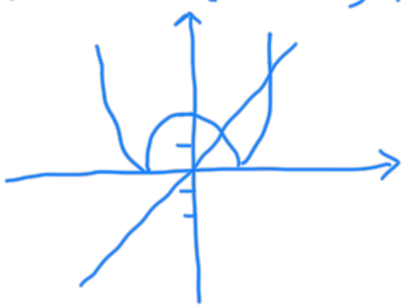
$|x^2-2|-x>0 \to |x^2-2|>x \to |x^2-2|=x$

$(x-2)(x+1)=0 \to x=2,-1$ (غ ق)



$\to x^2-2+x=0 \quad (x+2)(x-1)=0 \to x=-2,1$ (ق غ ق)

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

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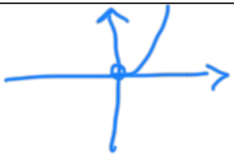
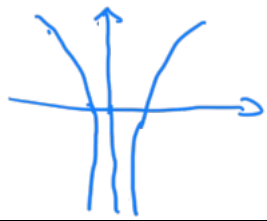
$g(1)=f(1) \to -1-3+8=4=2+2^{b-a} \to 2=2^{b-a} \to b-a=1$

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

$2b=4 \to b=2,\ a=1$

$\leadsto 2b-a=3$

$x=1 \to 0 = -2 + (\frac{1}{2})^{A+B} \to 2 = 2^{-A-B} \to A+B = -1$ $x=2 \to 2 = -2 + 2^{-2A-B} \to -2 = 2A+B$ $\begin{cases} (A+B=-1)\times -1 \\ 2A+B=-2 \end{cases}$ $A=-1,\ B=0 \to f(x) = -2 + 2^x \to f(3) = 6$ (ج)	۶
$m(t) = x_0 \times (\frac{8}{9})^{\frac{t}{60}} = \frac{1}{4}x \to (\frac{8}{9})^{\frac{t}{60}} = \frac{1}{4} \to \log_{\frac{8}{9}} \frac{1}{4} = \frac{t}{60}$ $\to \frac{t}{60} = \frac{\log_5 \frac{1}{4}}{\log_5 \frac{8}{9}} = \frac{\log_5 1 - \log_5 4}{\log_5 8 - \log_5 9} = \frac{0 - \log_5 2 + \log_5 3}{3\log_5 2 - 2\log_5 3} = \frac{-\frac{5}{12} - \frac{5}{7}}{3\times\frac{5}{12} - 2\times\frac{5}{7}} = \frac{14}{3}$ $\log_5 2 = \frac{1}{\log_2 5} = \frac{5}{12},\ \log_5 3 = \frac{1}{\log_3 5} = \frac{5}{7}$ $\to t = 280\ min$ (ج)	۷
$m(t) = x \times (\frac{7}{8})^{\frac{t}{7}} = \frac{1}{7}x \to \log_{\frac{7}{8}} \frac{1}{7} = \frac{t}{7} = \frac{\log_3 \frac{1}{7}}{\log_3 \frac{7}{8}}$ $= \frac{\log_3 1 - \log_3 7}{\log_3 7 - \log_3 8} = \frac{-\frac{5}{3}}{\frac{5}{3} - \frac{15}{8}} = 8$ $\log_3 7 = \frac{1}{\log_7 3} = \frac{5}{3}$ $\log_3 2 = \frac{1}{\log_2 3} = \frac{5}{8}$ $t = 56$ دقیقه (ج)	۸
$m(t) = x \times (\frac{96}{100})^t = \frac{1}{3}x \to \log_{\frac{96}{100}} \frac{1}{3} = t \to \frac{\log \frac{1}{3}}{\log \frac{96}{100}}$ $= \frac{-\log 3}{\log 96 - \log 100} = \frac{-\log 3}{5\log 2 + \log 3 - 2} = \frac{-0.48}{1.5 + 0.48 - 2} = \frac{-0.48}{-0.02} = 24$ (ج)	۹
$y = 9^{\log_3 x} = x^2$ $D_f = (0, +\infty)$  $y = \log x^2 = 2\log_{10} x$ $D_f = \mathbb{R} - \{0\}$  $y = \log_{10} x$  $y = 2\log_{10} x$ (ج)	۱۰