نام و نام خانوادگی علیرضا فضل الهی .... **پاسخنامه تشریحی تکلیف شماره** ..۲.۵.. **کلاس** یازدهم تجربی B.......

۱

$f(0)=2 \Rightarrow 1-\log_c^{-b}=2 \Rightarrow -b=c^{-1} \Rightarrow bc=-1$

$f(-1.5)=0 \Rightarrow 1-\log_c^{-1.5a-b}=0 \Rightarrow -1.5a=\underbrace{b+c}_{-1.5} \Rightarrow a=1$

$\begin{cases} b+c=-1.5 \\ bc=-1 \end{cases} \quad x^2+1.5x-1=0 \Rightarrow \begin{cases} b=-2 \\ c=\frac{1}{2} \end{cases}$ یا $\begin{cases} b=\frac{1}{2} \\ c=-2 \end{cases}$ غ ق ق زیرا پایه حالت منفی نمی‌تواند باشد

$(a+c)b=b-1=\begin{cases} -3 \\ -1.5 \end{cases}$ (غ ق ق)

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$\begin{cases} f(0)=\frac{2}{3} \Rightarrow 1+c\times 3^{a}=\frac{2}{3} \Rightarrow c\times 3^{a}=-\frac{1}{3} \\ f(1)=0 \Rightarrow 1+c\times 3^{a+b}=0 \Rightarrow 1+c\times 3^{a}\times 3^{b}=0 \end{cases}$

$\xrightarrow{c\times 3^{a}=-\frac{1}{3}} 1+\left(-\frac{1}{3}\right)\times 3^{b}=0 \Rightarrow 3^{b}=3 \Rightarrow b=1$

$f(-1)=1+c\times 3^{a-1}=1+\underbrace{c\times 3^{a}}_{-\frac{1}{3}}\times 3^{-1}=1+\left(-\frac{1}{3}\right)\times 3^{-1}=1+\underbrace{\left(-\frac{1}{3}\right)\times\left(\frac{1}{3}\right)}_{-\frac{1}{9}}=\boxed{\frac{8}{9}}$

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$\begin{cases} 2=c+\log_5^{b} \\ 0=c+\log_5^{(2.4a+b)} \end{cases} \Rightarrow \log_5^{(2.4a+b)}-\log_5^{b}=-2$

$\Rightarrow \log_5^{\frac{2.4a+b}{b}}=-2 \Rightarrow \frac{2.4a+b}{b}=5^{-2} \Rightarrow \frac{2.4a+b}{b}=\frac{1}{25}$

$\Rightarrow \frac{2.4a}{b}+1=\frac{1}{25} \Rightarrow \frac{24}{10}\times\frac{a}{b}=\frac{-24}{25} \Rightarrow \boxed{\frac{a}{b}=\frac{-2}{5}}$

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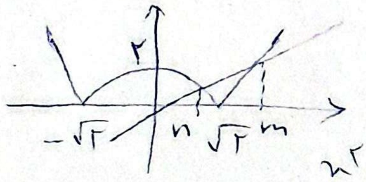
$|x^2-2|-x>0 \Rightarrow |x^2-2|>x \longrightarrow$ به دست آوردن دامنه با کمک رسم نمودار



$(-\infty,n)\cup(m,+\infty) \qquad m>\sqrt{2}$

$0<n<\sqrt{2}$

$x^2-2=x \Rightarrow x^2-x-2=0 \Rightarrow \begin{cases} x=-1 \\ x=2 \Rightarrow m=2 \end{cases}$

$-x^2+2=x \Rightarrow x^2+x-2=0 \Rightarrow \begin{cases} x=1 \Rightarrow n=1 \\ x=-2 \end{cases}$

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

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

$\Rightarrow 2^{b-a}=2 \Rightarrow b-a=1$

$10=f(-1) \Leftarrow f^{-1}(10)=-1$

$2+2^{b+a}=10 \Rightarrow 2^{b+a}=8 \Rightarrow b+a=3$

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

ادامه ۷

$\Rightarrow t\left(\frac{35-40}{28}\right) = -\left(\frac{35+60}{84}\right) \Rightarrow -5t = -\frac{95}{3} \Rightarrow t = \frac{19}{3}$

$\frac{19}{3} \times 60 = 380\ min$

عارف فضل‌اللهی

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$y = x^2 - x \Rightarrow x = 1 \Rightarrow y = 0 \Rightarrow A(1,0)$

$y = x^2 - x \Rightarrow x = 2 \Rightarrow y = 2 \Rightarrow B(2,2)$ $\quad f(x) = -2 + \left(\frac{1}{2}\right)^{Ax+B}$

از نقاط A و B می‌گذرد

$\begin{cases} -2 + \left(\frac{1}{2}\right)^{A+B} = 0 \Rightarrow \left(\frac{1}{2}\right)^{A+B} = 2 \Rightarrow A+B = -1 \\ -2 + \left(\frac{1}{2}\right)^{2A+B} = 2 \Rightarrow \left(\frac{1}{2}\right)^{2A+B} = 4 \Rightarrow 2A+B = -2 \end{cases}$

$\Rightarrow$ از حل دستگاه معادله نتیجه می‌گیریم $A = -1,\ B = 0 \Rightarrow f(3) = -2 + \left(\frac{1}{2}\right)^{-3} = -2 + 8 = 6$

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$m(t) = m_0 \left(\frac{8}{9}\right)^{\frac{t}{1}} \Rightarrow \frac{1}{4} m_0 = m_0 \left(\frac{8}{9}\right)^t \Rightarrow \left(\frac{8}{9}\right)^t = \frac{1}{4}$

$\log_5 \left(\frac{8}{9}\right)^t = \log_5 \frac{1}{4} \Rightarrow t \log_5 \left(\frac{8}{9}\right) = -\log_5 4$

$\log_3 5 = 1.4 = \frac{14}{10} = \frac{7}{5} \Rightarrow \log_5 3 = \frac{5}{7}$

$\log_2 5 = 2.4 = \frac{24}{10} = \frac{12}{5} \Rightarrow \log_5 2 = \frac{5}{12}$

$t \log_5 \left(\frac{8}{9}\right) = -\log_5 4 \Rightarrow t(\underbrace{\log_5 8}_{3\log_5 2} - \underbrace{\log_5 9}_{2\log_5 3}) = -(\log_5 2 + \log_5 2)$

$\Rightarrow t\left(3 \times \frac{5}{12} - 2 \times \frac{5}{7}\right) = -\left(\frac{5}{12} + \frac{5}{7}\right)$ (ادامه در بالا)

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

$\log_3 \left(\frac{7}{8}\right)^{\frac{t}{7}} = \log_3 \left(\frac{1}{7}\right) \Rightarrow \frac{t}{7} \log_3 \left(\frac{7}{8}\right) = \log_3 \left(\frac{1}{7}\right)$

$\frac{t}{7}(\log_3 7 - \log_3 8) = -\log_3 7 \Rightarrow \log_7 3 = 0.6 = \frac{6}{10} = \frac{3}{5} \Rightarrow \log_3 7 = \frac{5}{3}$

$\frac{t}{7}(\log_3 7 - 3\log_3 2) = -\log_3 7$ $\quad \log_2 3 = 1.6 = \frac{16}{10} = \frac{8}{5} \Rightarrow \log_3 2 = \frac{5}{8}$

$\Rightarrow \frac{t}{7}\left(\frac{5}{3} - 3 \times \frac{5}{8}\right) = -\frac{5}{3} \Rightarrow \frac{t}{7}\left(\frac{40-45}{24}\right) = -\frac{5}{3}$ (ادامه در پایین)

۹

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

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

$\xRightarrow{96 = 32 \times 3 = 2^5 \times 3} t(\log 2^5 + \log 3 - 2) = -\log 3$

$\Rightarrow t(5(0.3) + 0.48 - 2) = -0.48$

$= t(1.5 + 0.48 - 2) = -0.48 \Rightarrow -0.02t = -0.48 \Rightarrow t = 24$

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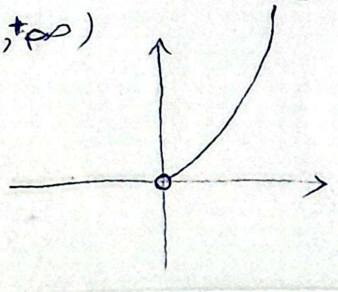
الف) $f(x) = 9^{\log_3 x} = x^{\log_3 9} = x^2$

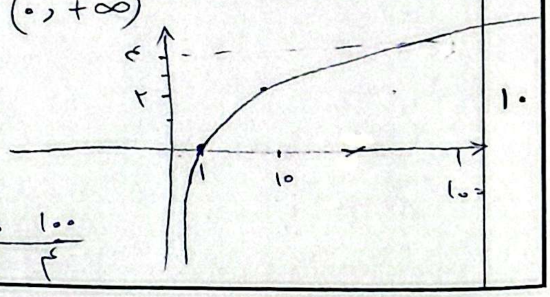
$D_f = (0, +\infty)$



ب) $f(x) = \log x^2 = 2\log_{10} x$

$D_f = (0, +\infty)$

x	1	10	100
y	0	2	4



ادامه ۸

$\frac{t}{7}\left(\frac{-5}{24}\right) = -\frac{5}{3} \Rightarrow \frac{t}{56} = 1 \Rightarrow t = 56$