نام و نام خانوادگی ..... پاسخنامه تشریحی تکلیف شماره ۲۵ کلاس .....

$y = 1 - \log_c(am-b)$ $\xrightarrow{n=0,\ y=2}$ $1-\log_c(-b)=2 \Rightarrow \log_c(-b)=-1 \Rightarrow -b=c^{-1} \Rightarrow b=-\frac{1}{c}$

$\xrightarrow{n=-1.5,\ y=0}$ $\log_c(1.5b)=1 \Rightarrow 1.5b=c \Rightarrow b=\frac{2}{3}c$

$\Rightarrow -\frac{1}{c}=\frac{2}{3}c \Rightarrow c^2=-\frac{3}{2} \Rightarrow c=\pm\sqrt{\frac{3}{2}}$

$c=-\sqrt{\frac{3}{2}} \Rightarrow b=-\sqrt{\frac{2}{3}}$ ✓ $\quad c=\sqrt{\frac{3}{2}} \Rightarrow b=\sqrt{\frac{2}{3}}$ ✗

$a=1$ $\quad (a+c)+b=(1+\frac{1}{4})-2=-\frac{3}{4}$ ✓

$f(x)=1+(a\times 2^{ax+b})^{x}$ $\xrightarrow{x=0}$ $\frac{2}{3}=1+(a\times 3^{a})^{0} \Rightarrow (a\times 3^a)^0=-\frac{1}{3}$ ✗

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

$x=0,\ y=\frac{2}{3}$ $\xrightarrow{c=-1}$ $a=-1$ $\quad -1\times 3^{b-1}=-1$

$3^{b-1}=1 \Rightarrow b-1=0 \Rightarrow b=1$

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

$x=0,\ y=2$ $\quad 2=c+\log_a^b \Rightarrow 2-c=\log_a^b \Rightarrow b=a^{2-c}$

$x=2.4,\ y=0$ $\quad 0=c+\log_{2.4a+b}^{2.4a+b}$

$\frac{b=a^{2-c}}{}$ $\quad a^{-c}=2.4a+a^{2-c} \Rightarrow a^{-c}-a^{2-c}=2.4a$

$\Rightarrow a^{-c}(1-2a)=2.4a \Rightarrow -2.4a^{-c}=2.4a \Rightarrow a=-1.a^{-c}$ $\quad \frac{a}{b}=\frac{-1.a^{-c}}{a^{2-c}}=-1.\frac{a^{-c}}{a^{2-c}}$

$f(x)=1-y_4^{(|x^2-2|-x)}$ $\longrightarrow$ $|x^2-2|-x>0$ ظاهربینی

$x^2=2 \Rightarrow x=\pm\sqrt{2}$

$-\sqrt{2}$		$+\sqrt{2}$
x^2-x-2	$-x^2-x+2$	$x^2-x-2>0$
$(x+1)(x-2)$	$-(x+1)(x-2)$	$(x+1)(x-2)>0$
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$1 \cap 2 = (-\infty, -\sqrt{2})$

$3 \cap 4 = [-\sqrt{2}, 1)$

$\cup 5 = (2, +\infty)$

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

① $x>2$ $\cup$ $(-\sqrt{2}, 1)$ ② $x>\sqrt{2}$ ③ $-2<x<\sqrt{2}$ ④ $-2<x<1$ ⑤ $x>2$, $x<-1+\sqrt{2}$ ⑥ $x<1$ $\longrightarrow$ $x<2$ I

$f(x)=2\times 2^{b-ax}$ $\quad g(x)=-x^2-2x+8$

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

$f^{-1}(16)=1 \Rightarrow f(1)=16$ $\quad f(-1)=2+2^{b+a}=16$ $\quad 2^{b+a}=14$

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

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

$2^{b+a}=8=2^3$

$b+a=3$

$f(x) = -2 + \left(\frac{1}{2}\right)^{Ax+B} \rightarrow f(2) = -2 + \left(\frac{1}{2}\right)^{2A+B} = 2 \qquad 2^{-2A-B} = 2^2$

$g(x) = x^2 - x \qquad -2A - B = 2 \qquad \boxed{f(x) = -2 + \left(\frac{1}{2}\right)^{-x} \quad f(3) = -2 + 8 = 6}$ ۶

$f(1) = g(1) \rightarrow g(1) = 1 - 1 = 0 \rightarrow f(1) = 0 \rightarrow f(1) = -2 + \left(\frac{1}{2}\right)^{A+B} = 0 \rightarrow 2^{-A-B} = 2$

$f(2) = g(2) \rightarrow g(2) = 4 - 2 = 2 \rightarrow f(2) = 2 \qquad \begin{cases} -2A - B = 2 \\ -A - B = 1 \end{cases} \Rightarrow \boxed{A = -1,\ B = 0} \qquad -A - B = 1$

$A = A_0 a^{\frac{t}{m}}$

$\frac{1}{6} A_0 = A_0 \left(\frac{8}{9}\right)^{\frac{t}{60}}$

$\frac{1}{6} = \left(\frac{8}{9}\right)^{\frac{t}{60}}$

$\log_{\frac{8}{9}} \frac{1}{6} = \frac{t}{60} \rightarrow -\log_{\frac{8}{9}} 6 = \frac{t}{60} \Rightarrow \frac{+95}{15} \Rightarrow \frac{+19}{3} = \frac{t}{60} \qquad t = \frac{19 \times 60}{3} = \boxed{380 \text{ دقیقه}}$

$\Rightarrow -\frac{\log_5 6}{\log_5 \frac{8}{9}} = \frac{-(\log_5 2 + \log_5 3)}{\log_5 8 - \log_5 9} = \frac{-(\log_5 2 + \log_5 3)}{3\log_5 2 - 2\log_5 3} = \frac{-\log_5 2 - \log_5 3}{3\log_5 2 - 2\log_5 3} = \frac{t}{60}$ ۷

$\log_2 5 = 2.4 \rightarrow \frac{1}{\log_5 2} = 2.4 \Rightarrow \log_5 2 = \frac{10}{24} = \frac{5}{12}$

$\log_3 5 = \frac{1}{\log_5 3} = 1.4 \Rightarrow \log_5 3 = \frac{10}{14} = \frac{5}{7}$

$\frac{-\frac{5}{12} - \frac{5}{7}}{\frac{5}{4} - \frac{10}{7}} = \frac{\frac{-35-60}{84}}{\frac{35-40}{28}} = \frac{\frac{-95}{84}}{\frac{-5}{28}}$

$A = A_0 a^{\frac{t}{m}} \qquad 100 - 12.5 = 87.5 \qquad$ هر روز ۸۷٫۵ درصدی شد

$\frac{1}{7} A_0 = A_0 \left(\frac{7}{8}\right)^{\frac{t}{7}} \qquad \frac{87.5}{100} = \frac{7}{8} \Rightarrow \frac{-1}{\log_7 \frac{7}{8}} = \frac{t}{7} \Rightarrow \frac{-1}{1 \log_7 7 - \log_7 8} = \frac{t}{7}$

$\frac{1}{7} = \left(\frac{7}{8}\right)^{\frac{t}{7}} \Rightarrow \log_{\frac{7}{8}} \frac{1}{7} = \frac{t}{7} \rightarrow -\log_{\frac{7}{8}} 7 = \frac{t}{7} \qquad \frac{-1}{1 - 3\log_7 2} = \frac{t}{7} \Rightarrow \frac{-1}{1 - 3\frac{\log_3 2}{\log_3 7}} = \frac{t}{7}$ ۸

$\frac{-1}{1 - 3\frac{\frac{1}{\log_2 3}}{\frac{1}{\log_3 7}}} = \frac{-1}{1 - 3\frac{\log_3 7}{\log_3 2}} = t$

$\frac{-1}{1 - 3\frac{.14}{1.14}} = \frac{t}{7} \qquad \frac{-1}{1 - \frac{9}{8}} = \frac{t}{7} \qquad \frac{-1}{-\frac{1}{8}} = \frac{t}{7}$

$\Rightarrow \boxed{8 = \frac{t}{7} \Rightarrow t = 56 \text{ روز}}$

$100 - 4 = 96 \qquad$ هر روز غلظت $\frac{96}{100}$ می‌شود یا $\frac{24}{25}$

$A = A_0 a^{\frac{t}{m}}$

$\frac{1}{3} A_0 = A_0 \left(\frac{24}{25}\right)^{\frac{t}{1}}$

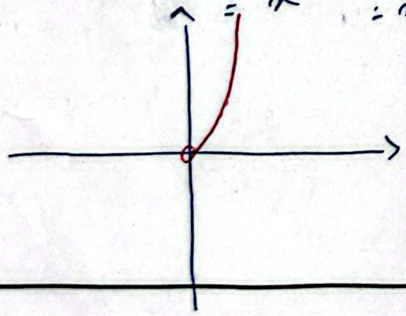
$\log_{\frac{24}{25}} \frac{1}{3} = t \Rightarrow -\log_{\frac{24}{25}} 3 = t \Rightarrow -\frac{\log 3}{\log \frac{24}{25}} = t = \frac{-0.48}{\log 24 - \log 25} = t = \frac{-0.48}{\log \frac{3 \times 8}{1} - \log \frac{100}{4}} = t$

$\frac{-0.48}{\log 3 + \log 2^3 - \log 100 + \log 2^2} = \frac{-0.48}{0.48 + 3\log 2 - 2 + 2\log 2} = \frac{-0.48}{0.48 + 0.9 - 2 + 0.6} = \frac{-0.48}{-0.02} = t$

$\boxed{t = 24} \qquad$ در ۲۴ روز

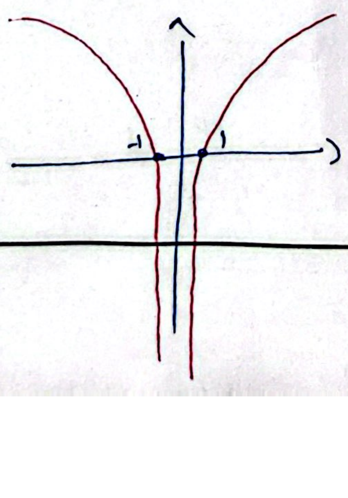
$y = 9^{\log_3 x} = x^{\log_3 9} = x^{\log_3 3^2} = x^2$

$D_y = x > 0$



$y = \log x^2 = 2\log|x| \quad c > 0$

$D_y = x^2 > 0 \rightarrow x \neq 0$



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