اسم و نام خانوادگی عیسی جان بابائی .... پاسخنامه تشریحی تکلیف شماره ۲۵ کلاس یازدهم ریاضی شنبه ها

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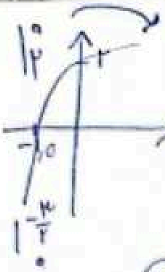


$y=1-\log_c^{ax-b}$

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

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

① $-b=\frac{1}{c}$

$\begin{cases} b+c=-\frac{3}{2} \\ ①\ -b=\frac{1}{c} \end{cases}$

$c-\frac{1}{c}=-\frac{3}{2}$

$\boxed{c=-2}$ $\boxed{b=\frac{1}{2}}$

$0=1-\log_{-2}^{-\frac{3}{2}a-\frac{1}{2}}$

$\log_{-2}^{-\frac{3}{2}a-\frac{1}{2}}=1$

$-\frac{3}{2}a-\frac{1}{2}=-2$ $\quad \boxed{a=1}$

$(a+c)b=(1-2)\frac{1}{2}=-\frac{1}{2}$

۲

$f(x)=1+c\times 3^{bx+a}$

$f(0)=1+(c\times 3^{a})$ ... $3^{a}=-\frac{1}{3}$ $\quad c, a=-1$

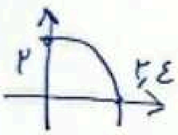
$f(1)=1+(-1\times 3^{b-1})=0$

$-1\times 3^{b-1}=-1$ $\quad 3^{b-1}=1$ $\quad \boxed{b=1}$

$f(x)=1+(-1\times 3^{x-1})$

$f(-1)=1+(-1\times\frac{1}{9})=\frac{8}{9}$

۳



$y=c+\log_5(ax+b)$

$2=c+\log_5^{b}$ ⇝ $\boxed{c=1}$ $\boxed{b=5}$

$0=c+\log_5^{2.4a+b}$

$0=1+\log_5^{2.4a+5}$

$\log_5^{2.4a+5}=-1$

$2.4a+5=\frac{1}{5}$

$\frac{24}{10}a=-\frac{24}{5}$ $\quad a=-2$

$\frac{a}{b}=-\frac{2}{5}$

۴

$f(x)=\log_4(|x^2-2|-x)$

$|x^2-2|-x>0$

$|x^2-2|>x$ $\quad -x^2+2<x<x^2-2$

$x^2-x-2>0$
$(x-2)(x+1)$

	-1		2	
$+$	0	$-$	0	$+$

(I)

$x^2+x-2>0$
$(x+2)(x-1)$

	-2		1	
$+$	0	$-$	0	$+$

(II)

$D: (I)\cap(II)=(-\infty,-2)\cup(2,+\infty)$

۵

$f(x)=2+2^{b-ax}$ $\quad g(x)=-x^2-3x+8$

$f^{-1}(10)=-1$ $\quad g(1)=-1-3+8=4$

$f(-1)=10$ $\quad f(1)=4$

$f(-1)=2^{b+a}+2=10$ $\quad f(1)=2+2^{b-a}=4$

$*\ \boxed{b+a=3}$ $\quad **\ \boxed{b-a=1}$

$\begin{cases} * & b+a=3 \\ ** & b-a=1 \end{cases}$

$b=2$

$a=1$

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

$f(x) = -2 + \left(\frac{1}{2}\right)^{Ax+B}$ $\quad f(1) = -2 + \left(\frac{1}{2}\right)^{B} = 0 \to B = -1$

$y = x^2 - x$ $\quad f(2) = -2 + \left(\frac{1}{2}\right)^{2A-1} = 2 \quad \left(\frac{1}{2}\right)^{2A-1} = 4$ ۶

$y = 1 - 1 = 0 \;\; \big|\, {}^{1}_{0}$ $\quad 2A - 1 = -2$

$y = 4 - 2 = 2 \;\; \big|\, {}^{2}_{2}$ $\quad \boxed{A = -\frac{1}{2}}$

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

$f(3) = -2 + \left(\frac{1}{2}\right)^{-\frac{5}{2}} = 2^{\frac{5}{2}} - 2 = \boxed{\sqrt{32} - 2}$

هر ساعت → $\frac{1}{9}$ از دست می‌دهد → $\frac{8}{9}$ باقی می‌ماند $\quad A_n = \underset{\text{مقدار اولیه}}{A_0} \times \left(\frac{8}{9}\right)^n$ $\quad \left\{ \log_2 3 = \frac{\frac{1}{\log_3 5}}{\frac{1}{\log_2 5}} = \frac{2.4}{1.4} = \frac{12}{7} \right.$

؟ دقیقه → $\frac{1}{6}$ باقی می‌ماند

$\frac{1}{6}\cancel{A_0} = \cancel{A_0} \times \left(\frac{8}{9}\right)^n \quad 6^{+1} = \left(\frac{9}{8}\right)^{+n} \xrightarrow{\text{طرفین } \log_2} \log_2 6 = \log_2 \left(\frac{9}{8}\right)^n$ ۷

$n \log_2 \frac{9}{8} = \log_2 6 \quad n = \frac{\log_2 6}{\log_2 \frac{9}{8}} = \frac{\log_2 2 + \log_2 3}{2\log_2 3 - 3\log_2 2} = \frac{1 + \frac{12}{7}}{\frac{24}{7} - 3} = \frac{\frac{19}{7}}{\frac{3}{7}} = \frac{19}{3}$ ساعت

$\frac{19}{3} \times 60 = \boxed{380 \text{ دقیقه}}$

هر هفته → $\frac{12.5}{100}$ از دست می‌دهد → $\frac{87.5}{100} = \frac{7}{8}$ باقی می‌ماند $\quad A_n = \underset{\text{مقدار اولیه}}{A_0} \times \left(\frac{7}{8}\right)^n$

؟ روز → $\frac{1}{7}$ باقی می‌ماند

$\frac{1}{7}\cancel{A_0} = \cancel{A_0} \times \left(\frac{7}{8}\right)^n \quad 7 = \left(\frac{8}{7}\right)^n \xrightarrow{\text{طرفین } \log_3} \log_3 7 = \log_3 \left(\frac{8}{7}\right)^n \to \frac{1}{\log_7 3} = n\left(\log_3 8 - \log_3 7\right)$

$\frac{5}{4} = n\left(3 \log_3 2 - \frac{5}{4}\right) \Rightarrow n = \frac{\frac{5}{4}}{\frac{15}{8} - \frac{5}{4}} = \frac{\frac{5}{4}}{\frac{45 - 30}{24}} = \frac{\frac{5}{4}}{\frac{15}{24}} = 8$ هفته

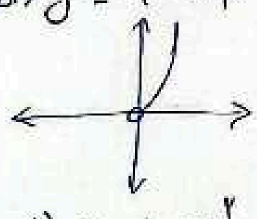
$8 \times 7 = 56$ روز

$A_0 = 100 L \quad \frac{-6}{100}$ نقص $: \left(\frac{94}{100}\right)^n \quad A_n = A_0 \times \left(\frac{94}{100}\right)^n$

$\frac{1}{3}\cancel{A_0} = \cancel{A_0} \times \left(\frac{94}{100}\right)^n \quad 3 = \left(\frac{100}{94}\right)^n \xrightarrow{\text{طرفین } \log_{10}} \log_{10} 3 = \log_{10} \left(\frac{25}{24}\right)^n$

$n \log \frac{25}{24} = 0.48 \quad n = \frac{48 \times 10^{-2}}{\log 25 - \log 24} = \frac{48 \times 10^{-2}}{\log 100 - \log 4 - 3\log 2 - \log 3} = \frac{48 \times 10^{-2}}{2 - 0.6 - 0.9 - 0.48} = \frac{48 \times 10^{-2}}{2 \times 10^{-2}} = 24$ ۹

الف) $y = 9^{\log_3 x} \quad x \in (0, +\infty) \to y = x^{\log_3 9} = x^2$



ب) $y = \log x^2 \quad x \in \mathbb{R} - \{0\} \quad y = \log x^2 = 2\log x$ ۱۰

[illegible] ها را در برابر می‌کنیم