نام و نام خانوادگی ...نیناز الیاسی... پاسخنامه تشریحی تکلیف شماره ۲۵ کلاس یازدهم دختر B

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

$\xrightarrow{(-1.5,0)} 0 = 1 - \log_c^{(-1.5a-b)} \quad \log_c^{(-1.5a-b)} = 1 \quad -1.5a - b = c$

$b + c = -\frac{3}{2} \xrightarrow{b=-\frac{1}{c}} \frac{-1+c^2}{c} = \frac{-3}{2} \quad 2c^2 + 3c - 2 = 0 \quad c^2 + 3c - 4 = 0 \quad (c+4)(c-1) = 0$

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

$-1.5a - (-2) = \frac{1}{2} \quad -1.5a = -1.5 \quad \boxed{a = 1}$

$\Big\}\ (a+c)b = (1 + \frac{1}{2}) \times -2 = \boxed{-3}$

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

$\xrightarrow{(1,0)} 0 = 1 + c \times 3^{a+b} \longrightarrow \underbrace{c \times 3^a}_{-\frac{1}{3}} \times 3^b = -1 \quad 3^b = 3 \quad \underline{b = 1}$

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

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

$\xrightarrow{(2.4,0)} 0 = c + \log_5^{2.4a+b} \quad c = -\log_5^{2.4a+b}$

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

$60a + 25b = b \quad 60a + 24b = 0 \quad 60a = -24b \quad \frac{a}{b} = \frac{-24}{60} = \boxed{-\frac{2}{5}}$

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$\log_4^{(|x^2-2|-x)} \longrightarrow |x^2-2| - x > 0 \longrightarrow x^2 - x - 2 > 0 \quad (x-2)(x+1) \longrightarrow (-\infty,-1) \cup (2,+\infty)$ ①

$\longrightarrow -x^2 - x + 2 > 0 \quad (x+2)(x-1) \longrightarrow (-2,1)$ ②

① $\cap$ ② $\longrightarrow D_f = (-2,-1)$

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$f(x) = 2 + 2^{b-ax} \quad g(x) = -x^2 - 3x + 8 \quad f(1) = g(1) \quad 2 + 2^{b-a} = 4 \quad 2^{b-a} = 2 \quad \boxed{b - a = 1}$

$f^{-1}(10) = -1 \longrightarrow f(-1) = 10 \Rightarrow 2 + 2^{b+a} = 10 \quad 2^{b+a} = 8 \quad \boxed{b + a = 3}$

$\begin{cases} b - a = 1 & b = 2 \\ b + a = 3 & a = 1 \end{cases} \quad 2b - a = 2(2) - 1 = \boxed{3}$

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

$\left(\frac{1}{2}\right)^{A+B} = 2 \quad (2^{-1})^{A+B} = 2 \quad -A-B = 1 \quad \boxed{A+B=-1}$

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

$\begin{cases} A+B=-1 \\ 2A+B=-2 \end{cases} \quad A=-1, \; B=0 \quad f(3) = -2 + \frac{1}{2}^{(-1)(3)} \Rightarrow -2 + \left(\frac{1}{2}\right)^{-3} = -2 + \underbrace{2^3}_{8} = \boxed{6}$

هر ساعت $\frac{1}{9}$ جرم باقی مانده $\longrightarrow t = x_0 \left(\frac{8}{9}\right)^t$ $\quad$ $\frac{1}{4}$ از جرم $\longrightarrow t = x_0 \frac{1}{4}$

$x_0 \left(\frac{8}{9}\right)^t = x_0 \frac{1}{4} \quad \frac{1}{4} = \left(\frac{8}{9}\right)^t \quad \log\frac{1}{4} = t \times \log\frac{8}{9} \quad t = \frac{\log\frac{1}{4}}{\log\frac{8}{9}}$ $\xrightarrow{\text{به مبنای ۵}}$

$t = \frac{\log_5 1 - \log_5 4}{\log_5 8 - \log_5 9} \Rightarrow \frac{0 - (1\log_5 2 + \log_5 3)}{3\log_5 2 - 2\log_5 3} = \frac{0 - (\overbrace{\frac{1}{2.4}}^{0.4} + \overbrace{\frac{1}{1.4}}^{0.7})}{3(\underbrace{\frac{1}{2.4}}_{0.4}) - 2(\underbrace{\frac{1}{1.4}}_{0.7})} \simeq \frac{-1.1}{1.2-1.4} \simeq \frac{-1.1}{-0.2} \simeq$ ۷

$\boxed{5.5} \quad 5.5 \times 60 \simeq \boxed{330 \text{ دقیقه}}$

هر هفته ۱۲٫۵ جرم باقی مانده $\longrightarrow t = x_0 \left(\frac{7}{8}\right)^t$ $\quad$ $\frac{1}{7}$ از جرم $\longrightarrow t = x_0 \frac{1}{7}$

$x_0 \left(\frac{7}{8}\right)^t = x_0 \left(\frac{1}{7}\right) \quad \left(\frac{7}{8}\right)^t = \frac{1}{7} \quad \log\frac{1}{7} = t \times \log\frac{7}{8} \quad t = \frac{\log\frac{1}{7}}{\log\frac{7}{8}}$ $\xrightarrow{\text{به مبنای ۳}}$

$t = \frac{\log_3 1 - \log_3 7}{\log_3 7 - \log_3 8} = \frac{0 - \overbrace{\frac{1}{0.6}}^{1.6}}{\underbrace{\frac{1}{0.6}}_{1.6} - (3 \times \underbrace{\frac{1}{1.6}}_{0.6})} \simeq \frac{-1.6}{-0.2} \simeq 8$ ۸

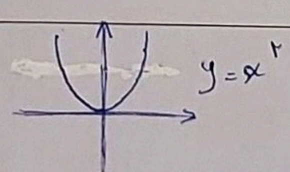
$8 \times 7 \simeq \boxed{56 \text{ روز}}$

$\frac{1}{3} = \left(1 - \frac{4}{100}\right)^t \quad \frac{1}{3} = \left(\frac{24}{25}\right)^t \quad t = \frac{\log\frac{1}{3}}{\log\frac{24}{25}} \longrightarrow \frac{\log 1 - \log 3}{(\log 3 + 3\log 2) - 2\log 5} =$

$\longrightarrow \log_{10} 10 = \log_{10} 5 + \log_{10} 2 \quad \log 5 = 1 - 0.3 = 0.7$

$\frac{0 - 0.48}{(0.48 + 0.9) - (1.4)} = \frac{-0.48}{-0.02} = \boxed{24 \text{ روز}}$ ۹

الف) $y = 9^{\log_3 x} \longrightarrow x^{\log_3 9} \quad y = x^2$



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ب) $y = \log x^2$