Date: Sub: بنام خدا کلاسی

۲۰

۱)

$(0,2) \to 2 = 1 - \log_c^{-b} \longrightarrow c = -\frac{1}{b}$

$(-1/5, 0) \to 0 = 1 - \log_c^{-1/5a-b} \longrightarrow c = -1/5a - b \longrightarrow \frac{1}{2} + 2 = -\frac{3}{2}a \to$ [illegible] (د)

$b - \frac{1}{b} = -\frac{3}{2} \to 2b^2 + 3b - 2 = 0 \longrightarrow b = \frac{-3 \pm \sqrt{9+16}}{4}$ → $\frac{1}{2}$ غ ق ق ، -2 ، $c = \frac{1}{2}$

$\frac{3}{2}x - 2 = -3$

۲)

$f(1) = 0 \longrightarrow 1 + c \times 3^a \times 3^b = 0 \longrightarrow 3^a \times 3^b \times c = -1$

$f(0) = \frac{2}{3} \longrightarrow 1 + c \times 3^a = \frac{2}{3} \longrightarrow 3^a \times c = -\frac{1}{3}$

$\longrightarrow 3^b = 3 \to b = 1$

(د)

$f(-1) = 1 + c \times 3^{a-1} = 1 - \frac{1}{9} = \frac{8}{9}$

۳)

$f(8) = 0 \to c + \log_5^{2.4a+b} = 0 \longrightarrow 5^{-c} = 2.4a + b$

$f(0) = 2 \to c + \log_5^b = 2 \longrightarrow b = 5^{2-c} \Rightarrow 2.4a = 5^{-c} - 5^{2-c}$ (د)

$2.4a = 5^{-c}(1 - 25)$

$a = -10 \times 5^{-c}$

$\frac{a}{b} = \frac{-10 \times 5^{-c}}{5^{-c} \times 25} = -0.4$

۴)

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

$x^2 - x - 2 = 0$, $(x-2)(x+1) = 0$ → 2 ، -1 غ ق ق

$x^2 - 2 + x = 0$, $(x+2)(x-1) = 0$ → -2 غ ق ق ، 1 (د)

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

۵)

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

$\Rightarrow a = 1,\ b = 2 \longrightarrow 4 - 1 = 3$

(د)

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

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

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

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

$\frac{1}{9}m_0=m_0\left(\frac{4}{9}\right)^n \longrightarrow -\log_{\frac{2}{3}}^{9}=n\left(2-\log_{\frac{2}{3}}^{2}-2\right) \longrightarrow -1\left(1+\frac{7}{12}\right)=n\left(\frac{7}{6}-2\right)$

$\log_{\frac{2}{3}}^{2}=\frac{\log_{\frac{2}{3}}^{2}}{\log_{\frac{2}{3}}^{\frac{2}{3}}}=\frac{\frac{1}{2}}{\frac{1}{6}}=\frac{7}{12}$

$n=\frac{19}{3}h \longrightarrow 38'$

$\left(\frac{7}{8}\right)^{\frac{n}{7}}m_0=\frac{1}{7}m_0 \longrightarrow \frac{n}{7}\left(\log_2^7-3\right)=-\log_2^7 \quad \frac{n}{7}\left(\frac{5}{3}-3\right)=-\frac{1}{3}$

$n=21$ روز

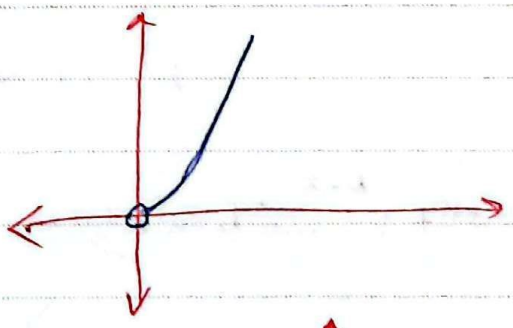
$\log_2^7=\frac{\log_3^7}{\log_3^2}=\frac{1}{0.4}=\frac{5}{2}$

$m\left(\frac{99}{100}\right)^n=\frac{1}{2}m \longrightarrow n\left(\log^{99}-2\right)=-\log^2$

$n(2\log 3+\log 11-2)=-\log 2 \longrightarrow n=24$ روز

(الف) $y=x^{\log_2^9}=x^2$

$x>0$



(ب) $y=\log x^2=2\log x$

$x^2>0 \longrightarrow x\neq 0$