نام و نام خانوادگی ...حسین ملکوتی خواه...... پاسخنامه تشریحی تکلیف شماره ..۲۵.. کلاس .....یازدهم (A).........

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

$b + c = \frac{-3}{2}$

$(a+c)b = ?$

$ab + cb = ab - 1 = b - 1$

$b = -2 \longrightarrow -2 - 1 = \boxed{-3}$

$x = 0 \to y = 2 : -\log_c^{-b} + 1 = 2 \to \log_c^{-b} = -1 \Rightarrow -b = \frac{1}{c} \Rightarrow c = \frac{-1}{b} \Rightarrow \boxed{bc = -1}$

$x = \frac{-3}{2} \to y = 0 : -\log_c^{\frac{-3a}{2} - b} + 1 = 0$

$\to \log_c^{\frac{-3a}{2} - b} = 1 \longrightarrow \frac{-3}{2}a - b = c$

$\xrightarrow{b+c=\frac{-3}{2}} \frac{-3}{2}a = \frac{-3}{2} \to \boxed{a = 1}$

$b + c = \frac{-3}{2} \to b + \frac{-1}{b} = \frac{-3}{2} \longrightarrow \boxed{b = -2}$ $\boxed{\cancel{b = \frac{1}{2}}}$ غ ق

۲

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

$x = 0 \to y = \frac{2}{3} : 1 + C \times 3^a = \frac{2}{3} \to \boxed{C \times 3^a = \frac{-1}{3}}$

$x = 1 \to y = 0 : 1 + C \times 3^{a+b} = 0 \to \boxed{C \times 3^{a+b} = -1}$

$\frac{C \times 3^{a+b}}{C \times 3^a} = 3 \Rightarrow 3^b = 3 \Rightarrow \boxed{b = 1}$

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

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

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$y = c + \log_5^{(ax+b)}$

$x = 0 \to y = 2 : c + \log_5^b = 2$

$x = 2.4 \to y = 0 : c + \log_5^{2.4a+b} = 0$

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

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

$\frac{a}{b} = ? = \frac{-10}{25} = \frac{-2}{5}$

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

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

$|x^2 - 2| > x$

$x^2 - 2 > x \to x^2 - x - 2 > 0 \Rightarrow$ (x: -1, 2; $+ \; - \; +$) $\to (-\infty, -1) \cup (2, +\infty)$ ①

$x^2 - 2 < -x \to x^2 + x - 2 < 0 \Rightarrow$ (x: 1, 2; $+ \; - \; +$) $\to (1, 2)$ ②

$\xrightarrow{① \cup ②} \mathbb{R} - \{[-1, 1], \{2\}\}$

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

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$f(x) = 2 + 2^{b-ax} \xrightarrow{x=1} f(x) = 2 + 2^{b-a} = 4 \to 2^{b-a} = +2 \to \boxed{b - a = 1}$

$g(x) = -x^2 - 3x + 8 \xrightarrow{x=1} g(x) = -1 - 3 + 8 = 4$

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

$\begin{cases} b - a = 1 \\ b + a = 3 \end{cases} \to b = 2,\ a = 1 \longrightarrow 2b - a = 4 - 1 = 3$

$f(x) = \left(\frac{1}{2}\right)^{Ax+B} - 2 \begin{cases} x=1 \to \left(\frac{1}{2}\right)^{A+B} - 2 = 0 \to \left(\frac{1}{2}\right)^{A+B} = 2 \to \boxed{A+B=-1} \\ x=2 \to \left(\frac{1}{2}\right)^{2A+B} - 2 = 2 \to \left(\frac{1}{2}\right)^{2A+B} = 4 \to \boxed{2A+B=-2} \end{cases}$ ۶

$y = x^2 - x \begin{cases} x=1 \to y=0 \\ x=2 \to y=2 \end{cases}$

$\begin{cases} A+B=-1 \\ 2A+B=-2 \end{cases} \Rightarrow A=-1,\ B=0$

$f(3) = \left(\frac{1}{2}\right)^{3A+B} - 2 = \left(\frac{1}{2}\right)^{3(-1)+0} - 2 = \left(\frac{1}{2}\right)^{-3} - 2 = 8-2 = 6$

$\frac{1}{6}x = x \times 2^{-\frac{1}{9}t} \to \left(2^{-\frac{1}{9}}\right)^t = 6^{-1} \to \log_{2^{-1/9}} 6^{-1} = t \Rightarrow 9\log_2 6 = t$ ۷

$9\,\frac{\log_5 6}{\log_5 2} = t \to 9\,\frac{\log_5 2 + \log_5 3}{\log_5 2} = t \to 9\,\frac{\frac{1}{\log_2 5} + \frac{1}{\log_3 5}}{\frac{1}{\log_2 5}} = 9\,\frac{\frac{10}{24} + \frac{1}{14}}{\frac{10}{24}} = 9\,\frac{\frac{5}{12} + \frac{5}{7}}{\frac{5}{12}}$

$9\,\frac{\frac{7\times5 + 12\times5}{84} \times 12}{5} = 9\,\frac{\frac{5\times19}{84}\times12}{5} = 9\,\frac{\cancel{5}\times19}{\cancel{5}\times7} = \frac{171}{7}h \simeq 9\times\frac{19}{7}\times60\ min = 1465.7\ min$

$\frac{12.5}{100} = \frac{1}{8}$ / $\frac{1}{7}x = x \times 2^{-\frac{1}{8}\times t} \to \log_{2^{-1/8}} \frac{1}{7} = t \to \frac{-1}{-\frac{1}{8}} \log_2 7 = t \to 8\log_2 7 = t$ ۸

$8\log_2 7 = 8 \times \frac{\log_3 7}{\log_3 2} = 8\times\frac{\log 7}{\log 2} = \frac{1.6}{0.6}\times 8 = \frac{16}{6}\times 8$ هفته $= \frac{16}{6}\times8\times7$ روز $= 149.3$ روز

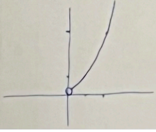
$\frac{1}{3} = 1 \times 2^{-\frac{4}{100}t} \sim \left(2^{-\frac{4}{100}}\right)^t = \frac{1}{3} \to \log_{2^{-4/100}} \frac{1}{3} = t$ ۹

$\frac{-1}{-\frac{4}{100}} \times \log_2 3 = t \sim 25\log_2 3 = t \Rightarrow 25 \times \frac{\log 3}{\log 2} = 25 \times \frac{0.48}{0.3} = 25\times1.6 = 40$ سال

الف) ۱۰

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

$D(y) = \boxed{x>0}$



ب)

$y = \log_{10} x^2$ $\quad 10>1 \to$ صعودی

$D(y) = x^2 > 0 \to x \neq 0$

$y = 2\log_{10} x$