نام و نام خانوادگی ......علی صفری...... پاسخنامه تشریحی تکلیف شماره ..۲۵.. کلاس ..یازدهم سپهر A..

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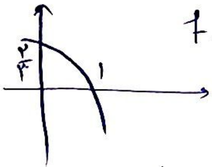
$y = 1 - \log_c^{(ax-b)} \rightarrow x = 0 \rightarrow \log_c^{-b} = -1 \rightarrow -b = \frac{1}{c}$

$x = -1.5 \rightarrow \log_c^{-1.5a-b} = 1 \rightarrow -1.5a - b = c \longrightarrow b + c = -1.5a = -\frac{3}{2}$

$\rightarrow a = 1 \rightarrow \frac{1}{-b} = -1.5a - b \Rightarrow \frac{1}{b} = 1.5 + b \rightarrow b^2 + 1.5b - 1 = 0 \rightarrow \begin{cases} b = \frac{1}{2} \ \times \\ b = -2 \ \checkmark \end{cases}$ $-b > 0$

$\rightarrow \boxed{b = -2} \rightarrow c = \frac{1}{2} \rightarrow (a + c)b = \left(\frac{3}{2}\right)(-2) = -3$

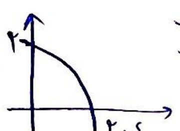
۲



$f_x = 1 + c \times 3^{a+bx} \rightarrow \begin{cases} x = 0 \rightarrow c \times 3^a = -\frac{1}{3} \\ x = 1 \rightarrow c \times 3^{a+b} = -1 \end{cases} \quad \frac{c \times 3^a \times 3^b}{c \times 3^a} = 3^b$

$\longrightarrow 3^b = 3 \rightarrow b = 1 \rightarrow f_{(-1)} = 1 + c \times 3^{a-1} = 1 + \frac{c \times 3^a}{3} = 1 - \frac{1}{9} = \frac{8}{9}$

۳



$y = c + \log_5^{ax+b} \longrightarrow f_{(0)} - f_{(2.4)} = \log_5^b - \log_5^{2.4a+b} = 2$

$\longrightarrow \log_5^{\frac{b}{2.4a+b}} = 2 \longrightarrow \frac{b}{2.4a+b} = 25 \rightarrow 60a + 25b = b$

$\rightarrow 60a = -24b \rightarrow \frac{a}{b} = \frac{-24}{60} = -\frac{2}{5}$

۴

$f_{(x)} = \log_4^{(|x^2-2| - x)} \longrightarrow |x^2 - 2| - x > 0 \rightarrow |x^2 - 2| > x$

$\rightarrow \begin{cases} x^2 - 2 > x \rightarrow x^2 - x - 2 > 0 & \begin{array}{ccccc} & -1 & & 2 & \\ + & | & - & | & + \end{array} \\ x^2 - 2 < -x \rightarrow x^2 + x - 2 < 0 & \begin{array}{ccccc} & -2 & & 1 & \\ + & | & - & | & + \end{array} \end{cases} \xrightarrow{\cup}$ $-2 \quad -1 \quad 1 \quad 2$

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

۵

$\left.\begin{array}{l} f_{(x)} = 2 + 2^{b-ax} \\ g_{(x)} = -x^2 - 3x + 8 \end{array}\right\} \rightarrow f_{(1)} = g_{(1)} \rightarrow 2 + 2^{b-a} = 4 \rightarrow 2^{b-a} = 2 \rightarrow b - a = 1$

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

$\longrightarrow \boxed{a = 1} \ \boxed{b = 2} \longrightarrow 2b - a = 4 - 1 = 3$

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

$\rightarrow x=1 \rightarrow -2 + 2^{-(A+B)} = 0 \rightarrow A+B=-1$

$\rightarrow x=2 \rightarrow -2 + 2^{-(2A+B)} = 2 \rightarrow 2A+B=-2$

$\rightarrow \boxed{A=-1} \quad \boxed{B=0} \quad \longrightarrow \quad f_3 = -2 + \left(\frac{1}{2}\right)^{-3} = 6$ ۶

$\frac{1}{4} = \left(\frac{8}{9}\right)^t \longrightarrow \log \frac{1}{4} = t \log \frac{8}{9} \rightarrow t = \frac{\log \frac{1}{4}}{\log \frac{8}{9}} = \frac{\log_5 1 - \log_5 4}{\log_5 8 - \log_5 9}$

$= \frac{0 - (\log_5 2 + \log_5 2)}{3\log_5 2 - 2\log_5 3} \xrightarrow[\log_5 3 = \frac{5}{7}]{\log_5 2 = \frac{5}{12}} t = \frac{-\left(\frac{5}{7} + \frac{5}{12}\right)}{\frac{15}{12} - \frac{10}{7}} = \frac{-\frac{95}{84}}{\frac{-15}{84}} = \frac{95}{15}$ ساعت ۷

$\rightarrow \frac{95}{15} \times 60 = 380$ دقیقه

$\frac{1}{7} = \left(\frac{7}{8}\right)^t \longrightarrow \log \frac{1}{7} = t \log \frac{7}{8} \longrightarrow t = \frac{\log \frac{1}{7}}{\log \frac{7}{8}} = \frac{\log_3 1 - \log_3 7}{\log_3 7 - \log_3 8}$

$\rightarrow t = \frac{0 - \log_3 7}{\log_3 7 - 3\log_3 2} \xrightarrow[\log_3 2 = \frac{5}{8}]{\log_3 7 = \frac{5}{3}} t = \frac{-\frac{5}{3}}{\frac{5}{3} - \frac{15}{8}} = \frac{-\frac{5}{3}}{\frac{-5}{24}} = 8$ هفته ۸

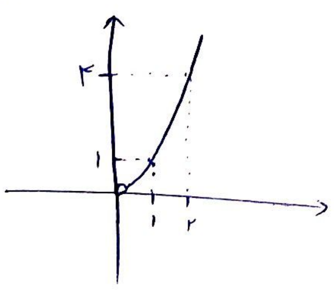
$\rightarrow$ 56 روز

$\frac{1}{3} = \left(\frac{96}{100}\right)^n \longrightarrow \log \frac{1}{3} = n \log \frac{96}{100} \rightarrow n = \frac{\log 1 - \log 3}{\log 96 - \log 100}$

$= \frac{-0.48}{(5\log 2 + \log 3) - 2} = \frac{-0.48}{1.5 + 0.48 - 2} = 24$ روز ۹

الف) $y = 9^{\log_3 x}$

$D_f = (0, +\infty)$



ب) $\log x^2$ ۱۰