آلیار کریم‌زاده - ۲۵ - یازدهم تجربی B

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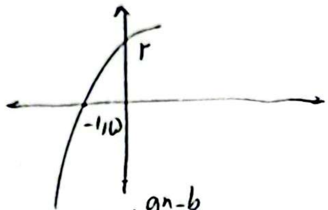


$y = 1-\log_c^{ax-b} \to 2 = 1-\log_c^{-b} \to \log_c^{-b} = -1$

$\to -b = \frac{1}{c} \to b = -\frac{1}{c}$; $\frac{c^2-1}{c} = -\frac{3}{2} \to 2c^2-2 = -3c \to 2c^2+3c-2=0$

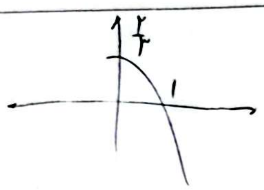
$\to c^2+\frac{3}{2}c-1=0 \to (c+2)(c-\frac{1}{2})=0 \to c=\frac{1}{2}$; $b=-2$

$1-\log_c^{ax-b}$, $0<c<1$

$0 = 1-\log_c^{1.5a-b} \to 1 = \log_c^{1.5a-b} \to b+c = 1.5a \to a=-1$

$\Rightarrow (-\frac{1}{2})-2 =$ (1)

۲-



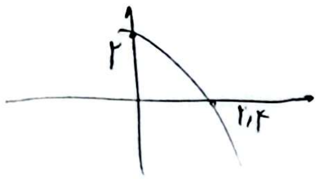
$f(x) = 1+c\times 3^{a+bx} \to -\frac{1}{3} = c\times 3^{a} \to -3^{-1} = c\times 3^{a}$

$\to -1 = c\times 3^{a+b}$

$\Rightarrow \frac{-1}{-3^{-1}} = \frac{c\times 3^{a+b}}{c\times 3^{a}} \to 3^{b} = 3$; $\boxed{b=1}$

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

۳-



$\log_5^{ax+b}+c = y \to \log_5^{b}+c = 2 \to b = 5^{c-2} = (1.5a)5^{-2}$

$\log_5^{2.4a+b} = -c \to 2.4a+b = 5^{-c}$

$2.4a = -5^{c-2}+5^{c} = 5^{c}(-\frac{1}{25}+\frac{1}{5}) = \frac{12}{5}a$

$5^{c}(\frac{4}{25}) = \frac{12}{5}a \to 5^{c} = 15a$

$\frac{a}{b} = \frac{15a}{(1.5a)5^{-2}} = \boxed{25}$

۴-

$f(x) = \log_4(|x^2-2|-x) \to |x^2-2|-x>0 \to |x^2-2|>x$

$\to x^2-2>x \to x^2-x-1>0 \to (x-2)(x+1)>0$; $-1 \quad 2$: $+ \mid - \mid +$

$\to x^2-2<-x \to x^2+x-2<0 \to (x+2)(x-1)<0$; $-2 \quad 1$: $+ \mid \pm \mid +$

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

۵-

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

$g(x) = -x^2-3x+8$

$\to 2+2^{b-ax} = -x^2-3x+8 \to 2^{b-ax} = -x^2-3x+6 \xrightarrow{x=1} 2^{b-a} = -1-3+6 \to 2^{b-a} = 2^{1} \to b-a=1$

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

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

۶-

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

$y = x^2-x$

$\xrightarrow{x=1} 1-1 = -2+(\frac{1}{2})^{A+B} \to 2 = 2^{-(A+B)} \to 1 = -(A+B) \to -1 = A+B$

$\xrightarrow{x=2} 4-2 = -2+(\frac{1}{2})^{2A+B} \to 2^{2} = 4 = 2^{-2A+B} \to 2 = -2A+B$

$\begin{cases} -1 = A+B \\ 2 = -2A+B \end{cases}$; $-3 = 3A \to A=-1,\ B=0$

$f(x) = -2+(\frac{1}{2})^{-x} \to f(3) = -2+2^{3} = \boxed{6}$

[illegible]

$f(n) = m\left(\frac{8}{9}\right)^n$ (مقدار اولیه) $\rightarrow m\left(\frac{8}{9}\right)^n = \frac{m}{6} \rightarrow \left(\frac{2^3}{3^2}\right)^n = \frac{1}{6} \rightarrow 3^{2n} = 6\times 2^{3n} \rightarrow 3^{2n-1} = 2^{3n+1}$ — 7

$\rightarrow \log_5 3^{2n-1} = \log_5 2^{3n-1} \rightarrow (2n-1)\log_5 3 = (3n+1)\log_5 2 \rightarrow (2n-1)\frac{10}{14} = (3n+1)\frac{10}{24} \rightarrow 48n-24 = 42n+14 \rightarrow 6n = 38$

$n = \frac{38}{6} = \frac{19}{3}$

$n = \frac{19}{3}$ ساعت $= 380\ min$

$f(n) = m\left(\frac{7}{8}\right)^n = \frac{m}{7} \rightarrow \left(\frac{7}{8}\right)^n = \frac{1}{7} \rightarrow \frac{7^n}{2^{3n}} = 7^{-1} \rightarrow 7^{n+1} = 2^{3n}$ — 8

$\rightarrow \log_3 7^{n+1} = \log_3 2^{3n} \rightarrow (n+1)\log_3 7 = 3n\log_3 2 \rightarrow (n+1)\left(\frac{10}{6}\right) = 3n\left(\frac{10}{16}\right) \rightarrow 9n = 8n+8 \rightarrow n = 8\ w \rightarrow 8\times 7 = 56$ روز

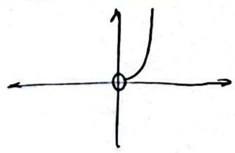
$f(n) = m\left(\frac{96}{100}\right)^n \rightarrow m\left(\frac{96}{100}\right)^n = \frac{m}{4} \rightarrow \log\left(\frac{96}{100}\right)^n = \log\frac{1}{4} \rightarrow -\log 4 = -0.48 = n(\log 96 - 2)$ — 9

$n(\log 2^5\times 3 - 2) = n(\log 3 + 5\log 2 - 2) = n(0.48+1.5-2) = 0.02n$

$n = \frac{-0.48}{-0.02} = \frac{48}{2} = 24$ روز

$y = 9^{\log_3 x} = x^{\log_3 9} = x^2 \rightarrow$ — 10

$\llcorner x>0$



$y = \log x^2 = 2\log x$