طاها بوجیان عطار - یازدهم تجربی - تکلیف ۲۸

۱-

$x=0 \to y = 1-\log_c^{-b} = 2 ,\ c>0 \Rightarrow \log_c^{-b} = -1 ,\ b = -1/c$

$b+c = \frac{-3}{2} \to -\frac{1}{c}+c = -\frac{3}{2} \Rightarrow c^2+\frac{3}{2}c-1=0 \Rightarrow 2c^2+3c-2=0 \to c^2+3c-4=0$

$c=\frac{1}{2},\ \cancel{-4}$ $\Downarrow$ $b=-2$

$x=-1.5 \Rightarrow y = 1-\log_c^{-1.5a-b} = 0 \Rightarrow \log_c^{-1.5a+b} = 1$

$-1.5a-b = c \to -1.5a+2 = \frac{1}{2} \Rightarrow -1.5a = 1.5 \Rightarrow a=1$ $\quad (a+c)b = -\cancel{2}\times\frac{3}{\cancel{2}} = -3$

۲-

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

$x=1\ \ f(1) = 1+c\times 3^{a+b} = 0 \Rightarrow c\times 3^a\times 3^b = -1 \Rightarrow \frac{-1}{3}\times 3^b = -1 \Rightarrow 3^b = 3 ,\ b=1$

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

۳-

$x=0\ \ y = c+\log_5^b = 2 \Rightarrow -\log_5^b+2 = c$

$x=2.4\ \ y = c+\log_5^{2.4a+b} = 0 \to 2-\log_5^b+\log_5^{2.4a+b} = 0 \Rightarrow \log_5^{2.4a+b} - 2$

$\log_5^{2.4a+b} = \log_5^{\frac{b}{25}} \Rightarrow 2.4a+b = \frac{b}{25} \Rightarrow a = -\frac{2}{5}b ,\ \frac{a}{b} = \frac{-2}{5}$

۴-

$f(x) = \log_4^{|x^2-2|-x} \Rightarrow |x^2-2|-x>0 \to x\geq\sqrt{2}$ یا $x\leq-\sqrt{2}$ I

$\to -\sqrt{2}<x<\sqrt{2}$ II

$x^2-2>x \Rightarrow x^2-x-2>0$ $\quad$ (−1, 2: + | − | +) $\xrightarrow{\cap I} (-\infty,-\sqrt{2}]\cup(2,+\infty)$

$x^2-2<x \Rightarrow x^2+x-2<0$ $\quad$ (−2, 1: + | − | +) $\xrightarrow{\cap II} (-\sqrt{2},1)$

$\Rightarrow (-\infty,1)\cup(2,+\infty)$

۵-

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

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

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

۶-

$x=1 \to 0 = -2+(\frac{1}{2})^{A+B} \Rightarrow (\frac{1}{2})^{A+B} = 2 ,\ A+B = -1$

$x=2 \to 2 = -2+(\frac{1}{2})^{2A+B} \to (\frac{1}{2})^{2A+B} = 4 ,\ 2A+B = -2$ $\quad \}\ A=1,\ B=0$

$f(x) = -2+(\frac{1}{2})^{-x} \longrightarrow -2+8 = 6$

۷-

$(\frac{8}{9})^{\frac{t}{60}}\cancel{m} = \frac{1}{6}\cancel{m} \Rightarrow \frac{t}{60}\log^{\frac{8}{9}} = \log^{\frac{1}{6}} \to \frac{-t}{60}\log^{\frac{8}{9}} = -\log^{\frac{1}{6}} \Rightarrow \frac{t}{60}\log^{\frac{9}{8}} = \log^6$

$\frac{t}{60} = \frac{\log^6}{\log^{9/8}} = \frac{\log_5^6}{\log_5^{9/8}} = \frac{\log_5^2+\log_5^3}{2\log_5^3-3\log_5^2} \longrightarrow \frac{\frac{1}{2.4}+\frac{1}{1.4}}{\frac{2}{1.4}-\frac{3}{2.4}} = \frac{3.8}{0.6} = \frac{19}{3}$

/ /

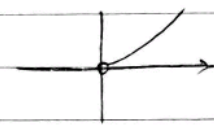
$\cancel{m}(\frac{۷}{۸})^{\frac{t}{۷}} = \frac{۱}{۷}\cancel{m} \longrightarrow (\frac{۸}{۷})^{\frac{t}{۷}} = ۷ \Rightarrow (\frac{t}{۷}) \log \frac{۸}{۷} = \log ۷$ ۸-

$\frac{t}{۷} = \frac{\log ۷}{\log ۸/۷} = \frac{\log_۳ ۷}{۳\log_۳ ۲ - \log_۳ ۷} = \frac{۱/۰٫۶}{\frac{۳}{۱٫۶} - \frac{۱}{۰٫۶}} = \frac{۱٫۶}{۰٫۲} = ۸ \longrightarrow \frac{t}{۷} = ۸ , t = ۵۶$

$\cancel{۲}\times(\frac{۲۴}{۲۵})^{t} = \frac{۱}{۳}\times\cancel{۲} = (\frac{۹۶}{۱۰۰})^{t} = \frac{۱}{۳} \longrightarrow t \log \frac{۹۶}{۱۰۰} = \log \frac{۱}{۳} \Rightarrow (t)(\log ۹۶ - ۲) = -\log ۳$ ۹

$(t)(۵\log ۲ + \log ۳ - ۲) = -\log ۳ \longrightarrow t(۱٫۵ + ۰٫۴۸ - ۲) = -(۰٫۴۸) \Rightarrow t = ۲۴$

$y = ۹^{\log_۳ x} = x^{\log_۳ ۹} = x^۲ \longrightarrow x > ۰ \longrightarrow D_f = (۰, +\infty)$ ۱۰-



$y = \log x^۲ = ۲\log x \longrightarrow x \neq ۰ \longrightarrow D_f = \mathbb{R} - \{۰\}$