یازدهم پسر B تکلیف ۱۵ محمدامین جعفری

1

$f(0)=2 \Rightarrow 1-\log_c^{-b}=2 \Rightarrow \log_c^{-b}=-1 \Rightarrow b=-\frac{1}{c}$

$\Rightarrow c+\left(-\frac{1}{c}\right)=-\frac{3}{2} \Rightarrow c^2+\frac{3}{2}c-1=0 \Rightarrow 2c^2+3c-2=0 \Rightarrow c=\frac{-3\pm\sqrt{9+16}}{4}=\frac{-3\pm5}{4}$

$\Rightarrow c=\begin{cases}-2 \xrightarrow{c>0} \text{غ ق ق} \\ \frac{1}{2} \Rightarrow b=-2\end{cases}$ $f(-1.5)=0 \Rightarrow 1-\log_{\frac{1}{2}}^{-\frac{3}{2}a+2}=0 \Rightarrow \log_{\frac{1}{2}}^{-\frac{3}{2}a+2}=1$

$\Rightarrow -\frac{3}{2}a+2=\frac{1}{2} \Rightarrow -3a+4=1 \Rightarrow a=1 \Rightarrow b(a+c)=-2\left(1+\frac{1}{2}\right)=-3$

2

$f(1)=0 \Rightarrow 1+c\times3^{a+b(1)}=0 \Rightarrow c\times3^{a+b}=-1$

$f(0)=\frac{2}{3} \Rightarrow 1+c\times3^{a}=\frac{2}{3} \Rightarrow c\times3^{a}=-\frac{1}{3}$ $\Big\}\ 3^b=3 \Rightarrow b=1$

$f(-1)=1+c\times3^{a-b}=1+\frac{(c\times3^a)}{3^b}=1+\frac{-\frac{1}{3}}{3}=1-\frac{1}{9}=\frac{8}{9}$

3

$f(0)=2 \Rightarrow c+\log_a^b=2 \Rightarrow \log_a^b=2-c \Rightarrow b=a^{2-c}=\frac{25}{a^c}$

$f(2.4)=0 \Rightarrow c+\log_a^{2.4a+b}=0 \Rightarrow \log_a^{2.4a+b}=-c \Rightarrow a^{-c}=2.4a+b$

$\Rightarrow b=\frac{25a}{\frac{1}{2.4a+b}}=25a(2.4a+b)=60a+25ab \Rightarrow -24b=60a \Rightarrow -\frac{2}{5}b=a$

$\Rightarrow \frac{a}{b}=\frac{-\frac{2}{5}b}{b}=-\frac{2}{5}$

4

$|x^2-2|-x>0$
- $\nearrow x>0 \Rightarrow x^2-x-2>0$ (−1, 2: + | − | +) $\Rightarrow x\in(2,+\infty)$ ①
- $\searrow x<0 \Rightarrow -x^2+2-x>0 \Rightarrow x^2+x-2<0$ (−2, 1: + | − | +) $\Rightarrow x\in(-2,0)$ ②

$① \cup ② \longrightarrow D_f=(-2,0)\cup(2,+\infty)$

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

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

$\Rightarrow a=1 \Rightarrow b=2 \Rightarrow 2b-a=2(2)-1=4-1=3$

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

$(2)^2 - 2 = 2 = -2 + \left(\frac{1}{2}\right)^{2A+B} \Rightarrow 4 = \left(\frac{1}{2}\right)^{2A+B} \Rightarrow 2A+B=-2$

$\Rightarrow A=-1 \Rightarrow B=0$

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

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$\frac{9}{9} - \frac{1}{9} = \frac{8}{9} \qquad \left(\frac{8}{9}\right)^n = \frac{1}{6} \Rightarrow 8^n = \frac{9^n}{6}$

$2^{2.4}=5 \Rightarrow 2 = 5^{\frac{5}{12}}$, $3^{1.4}=5 \Rightarrow 3 = 5^{\frac{5}{7}}$

$5^{\frac{15}{12}n} = \frac{5^{\frac{10}{7}n}}{6}$

$\Rightarrow \frac{5^{\frac{5}{4}n}}{5^{\frac{10}{7}n}} = \frac{1}{6} \Rightarrow 5^{\frac{35n-40n}{28}} = 5^{-\frac{5n}{28}} = \frac{1}{2\times 3} = \frac{1}{5^{\frac{5}{12}} \times 5^{\frac{5}{7}}} = \frac{1}{5^{\frac{95}{84}}}$

$\Rightarrow 5^{-\frac{5n}{28}} \times 5^{\frac{95}{84}} = 1 \Rightarrow -\frac{5n}{28} + \frac{95}{84} = 0 \Rightarrow \frac{5n}{28} = \frac{95}{84} \Rightarrow n = \frac{95}{84} \times \frac{28}{5} = \frac{19}{3}$

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$\frac{100}{100} - \frac{12.5}{100} = \frac{87.5}{100} = \frac{7}{8} \qquad \left(\frac{7}{8}\right)^n = \frac{1}{7} \Rightarrow 8^n = 7^{n+1}$

$2^{1.6}=3 \Rightarrow 2 = 3^{\frac{5}{8}}$, $7^{0.6}=3 \Rightarrow 7 = 3^{\frac{5}{3}}$

$3^{\frac{15n}{8}} = 3^{\frac{5}{3}(n+1)} = 3^{\frac{5}{3}n + \frac{5}{3}} \Rightarrow \frac{15}{8}n = \frac{5}{3}n + \frac{5}{3}$

$\Rightarrow \frac{45-40}{24}n = \frac{5}{24}n = \frac{5}{3} = \frac{40}{24} \Rightarrow 5n = 40 \Rightarrow n = 8$

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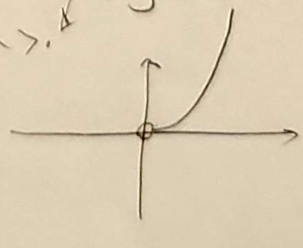
الف) $y = 9^{\log_3 x} \Rightarrow y = x^{\log_3 9} = x^2$, $x>0$



ب) $y = \log x^2 = 2\log x$