$\log(2-x) - \log(2-x)^{-2} = 3$

$3\log(2-x) = 3 \rightarrow \log(2-x) = 1 \rightarrow 2-x = 10 \quad x = -8$

$\log_{\sqrt{2}}^{(-x)} \rightarrow \log_{\sqrt{2}}^{8} = \frac{3}{\frac{1}{2}} \log_2^2 = 6$ ✓ (4)

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$3^{x^2-2} = 81^{4x} \rightarrow x^2 - 2 = 4x \rightarrow x^2 - 4x - 2 = 0$

$(x-2)^2 - 6 = 0$

$(x-2)^2 = 6$

$\rightarrow x - 2 = \sqrt{6} \rightarrow x = \sqrt{6} + 2$

$\rightarrow x - 2 = -\sqrt{6}$ (5)

$x = \underbrace{2 - \sqrt{6}}_{\text{غ ق ق}}$

$\log_6^{x-2} \rightarrow \log_6^{\sqrt{6}+4-2} = \frac{1}{2}\log_6^6 = \frac{1}{2}$ ✓

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$\star \log_3^2 = \frac{5}{8} \rightarrow \log_2^3 = \frac{8}{5}$

$\log_{18}^8 = \frac{1}{\log_8^{18}} \qquad \log_8^{18} = \log_{3^3}^{3^2 \times 2} \rightarrow \log_{2^3}^{2} + \log_{3^3}^{3^2} = \frac{1}{3}\log_2^2 + \frac{2}{3}\log_2^3$

$\frac{1}{3} + \underbrace{\frac{2}{3} \times \frac{8}{5}}_{\frac{16}{15}} = \frac{21}{15}$ ✓ (7)

$\log_{\frac{21}{15}}^{\frac{8}{18}} = \frac{1}{\frac{21}{15}} = \frac{15}{21} = \frac{5}{7}$

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$\log_{12}^6 = \frac{\log_4^6}{\log_4^{12}} = \frac{\log_4^2 + \log_4^3}{\log_4^2 + \log_4^3} = \frac{0/5 + 0/8}{1 + 0/8} = \frac{1/3}{1/8} = \frac{13}{18}$ ✓ (9)

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$x = -1 \rightarrow a\log 2 - a + b\log 2 = 0 \xrightarrow{\log 2 = t} at - a + bt = 0 \xrightarrow{:a}$

$t - 1 + \frac{b}{a}t = 0$

$t(1 + \frac{b}{a}) = 1 \rightarrow t = \frac{1}{1+\frac{b}{a}} \rightarrow \log_{10}^2 = \frac{1}{1+\frac{b}{a}} \rightarrow \log_2^{10} = 1 + \frac{b}{a}$ (10)

$\log_2^2 + \log_2^5 = 1 + \frac{b}{a}$

$\frac{b}{a} = \log_2^5 \rightarrow (\sqrt{2})^{\log_2^5} = \sqrt{5}$

یازدهم دوره B — ۱۴,۲۵ — فایل اشتباه (فاطمه شکرانی) — (تألیف ۴۴)

$x=1 \to y=x^2$, $(b,1) \to 3^{A+B}=1$

$x=3 \to y=x^2$, $(3,9) \to 3^{3A+B}=9$

$\begin{cases} A+B=0 \\ 3A+B=2 \end{cases}$

$A=1, B=-1$

$f(x)=3^{x-1}$

نقطه برخورد با $y$ $\to$ $3^{0-1}=y$ $\quad y=\frac{1}{3}$

گزینه ۱

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$\log_2^{2x+10} = x+3$

$2^{2x}+10=2^{x+3} \to 2^{2x}-2^{x+3}+10=0$ $\quad (2^x)^2-8\times 2^x+10=0 \to t^2-8t+10=0$

$(t-5)(t-2)=0$

$t=5,2$

$t=5 \to 2^x=5 \to x=\log_2^5$

$t=2 \to 2^x=2 \to x=\log_2^2$ $\to y_{12}^3+y_2^5=y_2^{15}$

گزینه ۲ — ۱,۷۵

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$(\log_{21}^3)^2+(\log_{21}^7+\log_{21}^{21})(\log_{21}^3+2\log_{21}^{21}) \to (\log_{21}^3)^2+(2-\log_{21}^3)(2+\log_{21}^3)$

$\log_{21}^{\frac{21}{3}}=\log_{21}^{21}-\log_{21}^3$ $\quad =(\log_{21}^3)^2-(\log_{21}^3)^2+4=4$

گزینه ۳

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$\log^{(1-x)^2}+\log^{(1-x)^3}=5 \to (1-x)^5=10^5$ $\quad 1-x=10$ $\quad x=-9$

$\log_3^{-x} \to \log_3^9=2$

گزینه ۴

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$\log_2^{(x^2+2x+4)}=3$ $\quad \log_2^{x^3-1}=3$ $\quad x^3-1=8$ $\quad x=\sqrt[3]{9}$

$\log_{\sqrt[3]{2}}^x \to \log_{\sqrt[3]{2}}^{\sqrt[3]{9}}=\log_{2^{\frac{1}{3}}}^{2^{\frac{2}{3}}} \to \frac{\frac{2}{3}}{\frac{1}{3}}\log_2^2=4$

گزینه ۵