نام و نام خانوادگی محمدعرفان ضیایی...... پاسخنامه تشریحی تکلیف شماره .... کلاس ....

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$f(x) = 3^{Ax+B} \Rightarrow y = x^2 \Rightarrow x=1 \Rightarrow y=1$ و $x=3 \Rightarrow y=9 \Rightarrow 3^{A+B}=1 \Rightarrow A+B=0$ و $3^{3A+B}=9 \Rightarrow 3A+B=2$

$\Rightarrow \begin{cases}A+B=0\\3A+B=2\end{cases} \Rightarrow 2A=2 \Rightarrow A=1 \Rightarrow B=-1 \Rightarrow 3^{x-1}=y \Rightarrow x=0 \Rightarrow 3^{-1}=y \Rightarrow y=\frac{1}{3}$

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$\log_2^{4^x+15} = x+3 \Rightarrow 4^x+15 = 2^x \times 8 \Rightarrow 4^x+15 = 2^{x+3} \Rightarrow 2^{2x}+15 = 8\times 2^x$

$\Rightarrow 2^{2x} - 8\times 2^x + 15 = 0 \Rightarrow 2^x = t \Rightarrow t^2-8t+15=0 \Rightarrow (t-5)(t-3)=0 \Rightarrow t=5 \quad t=3$

$2^x=3 \Rightarrow \log_2^3 = x$ و $2^x=5 \Rightarrow \log_2^5 = x \Rightarrow \alpha+\beta = \log_2^3+\log_2^5 = \log_2^{15}$

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$(\log_{21}^3)^2 + \log_{21}^{147} \times \log_{21}^{1323} \Rightarrow (\log_{21}^3)^2 + (\log_{21}^{21}+\log_{21}^7)(2\log_{21}^{3}+\log_{21}^7+\log_{21}^{21})$

$\Rightarrow \log_{21}^7 = 1-\log_{21}^3 \Rightarrow (\log_{21}^3)^2 + (1+1-\log_{21}^3)(2\log_{21}^3+1-\log_{21}^3+1)$

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

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$\log^{(x^2-2x+1)} + 3\log^{(1-x)} = 5 \Rightarrow \log^{(x-1)^2} + \log^{-(x-1)^3} = 5 \Rightarrow \log^{-(x-1)^5} = 5$

$\Rightarrow 5\log^{-(x-1)} = 5 \Rightarrow \log^{-(x-1)} = 1 \Rightarrow -(x-1)=10 \Rightarrow (x-1)=-10 \Rightarrow x=-9$

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

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$\log_2^{(x^2+2x+4)} + \log_2^{(x-2)} = 3 \Rightarrow \log_2^{(x^2+2x+4)(x-2)} = 3 \Rightarrow (x^2+2x+4)(x-2)=8$

$\Rightarrow x^3+2x^2+4x-2x^2-4x-8=8 \Rightarrow x^3-8=8 \Rightarrow x^3=16 \Rightarrow x=\sqrt[3]{16}$

$\Rightarrow \log_{\sqrt[3]{2}}^{\sqrt[3]{16}} = 4$

$\log^{(2-x)} - \log^{\frac{1}{(x-2)^2}} = 3 \Rightarrow \log^{-(x-2)} - \log^{(x-2)^{-2}} = 3$

$\Rightarrow \log^{\frac{-(x-2)}{(x-2)^{-2}}} = 3 \Rightarrow \log^{-(x-2)^3} = 3 \Rightarrow -(x-2)^3 = 10^3 \Rightarrow -(x-2) = 10 \Rightarrow x-2 = -10$ 6

$\Rightarrow x = -8 \Rightarrow \log_{\sqrt{2}}^{8} = 6$

$3^{x^2-2} = 81^x \Rightarrow 3^{x^2-2} = 3^{4x} \Rightarrow x^2-2 = 4x \Rightarrow x^2-4x-2=0 \Rightarrow x^2-4x+4=6 \Rightarrow (x-2)^2=6$

$\Rightarrow (x-2) = \sqrt{6} \Rightarrow \log_6^{\sqrt{6}} = \frac{1}{2}$ 7

$\log_3^2 = \frac{5}{8} \Rightarrow \log_{18}^8 = ? \Rightarrow \frac{\log_3^8}{\log_3^{18}} \Rightarrow \frac{3\log_3^2}{2+\log_3^2} \Rightarrow \frac{3(\frac{5}{8})}{2+\frac{5}{8}} \Rightarrow \frac{\frac{15}{8}}{\frac{21}{8}} = \frac{15}{21} = \frac{5}{7}$ 8

$\log_4^3 = 0.8 \Rightarrow \log_{12}^6 = ? \Rightarrow \frac{\log_4^6}{\log_4^{12}} \Rightarrow \frac{\log_4^2 + \log_4^3}{\log_4^4 + \log_4^3}$

$\Rightarrow \frac{\frac{1}{2} + \log_4^3}{1 + \log_4^3} \Rightarrow \frac{\frac{1}{2} + 0.8}{1 + 0.8} \Rightarrow \frac{1.3}{1.8} = \frac{13}{8}$ 9

$(a\log^2)x^2 + ax + b\log^2 = 0 \to x = -1 \Rightarrow a\log^2 - a + b\log^2 = 0 \Rightarrow \log^2(a+b) = a$

$\Rightarrow \log^2 = \frac{a}{a+b} \Rightarrow \frac{1}{\log 2} = \frac{a+b}{a} \Rightarrow \frac{1}{\log 2} = 1 + \frac{b}{a} \Rightarrow \frac{b}{a} = \frac{1}{\log 2} - 1$ 10

$\Rightarrow \log_2^{10} - 1 = \frac{b}{a} \Rightarrow \frac{b}{a} = \log_2^5 \Rightarrow (\sqrt{2})^{\frac{b}{a}} \Rightarrow (\sqrt{2})^{\log_2^5} \Rightarrow (5)^{\log_2^{\sqrt{2}}} \Rightarrow 5^{\frac{1}{2}} \Rightarrow \sqrt{5}$