نام و نام خانوادگی ...بهراد عباسی... پاسخنامه تشریحی تکلیف شماره ...۲۳... کلاس ...یازدهم پسر A...

$$\log_{mn} n^{2n} = \log_{n^{a+1}} n^{2a\pm1} = b < 2 \to [b] = 1$$

$$\log_n m = a \to \boxed{n^a = m}$$

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$$\log_{\frac{1}{2}} x \neq 0 \to \boxed{\begin{matrix} x>0 \\ x\neq 1\end{matrix}} \qquad \frac{x}{\log_{\frac{1}{2}} x} \geq 0 \equiv \frac{+}{\log_{\frac{1}{2}} x} \to \boxed{x<1} \Big\} \begin{matrix} 0<x<1 \\ D_f=(0,1)\end{matrix}$$

$$\left.\begin{matrix} x^2-x-2>0 \to (-\infty,-1)\cup(2,+\infty) \\ \cap \\ x^2-1\geq 0 \to (-\infty,-1]\cup[1,+\infty) \end{matrix}\right\} D_f = (-\infty,-1)\cup(2,+\infty)$$

۲

$$2\log_x a + \frac{1}{2}\log_a x = \frac{2}{\log_a x} + \frac{1}{2}\log_a x \to \frac{4}{\cancel{t}} + \frac{1}{\cancel{2}} t^2 = 4t$$

$$\log_a x = t$$

$$\to t^2 - 4t + 4 = 0$$

$$\hookrightarrow t = 2 \to \log_a 9 = 2 \to \boxed{a=3}$$

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$$\log 5 = \log\frac{10}{2} \simeq 1 - 0.3 \simeq \underline{0.7}$$

$$\hookrightarrow (0.7\times 0.4)x^2 + 0.8x - 1.1 = 0 \Rightarrow 3x^2 + 8x - 11 = 0$$

$$1 \quad , \quad -\frac{11}{3} \Big\} |x_1 - x_2| = \frac{14}{3}$$

۴

$$\log_{14} 10 = \frac{\frac{\log 10}{\log 2}}{\frac{\log 14}{\log 2}} = \frac{\log_2 5 + 1}{\log_2 7 + 1} = \frac{3}{3.8} = \boxed{\frac{15}{19}}$$

$$2.8$$

$$\log_4 5 = \frac{1}{\log_5 4} = 2$$

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$\log_{۱۵}^{۶} = \frac{۱}{\log_{۶}^{۱۵}} = \frac{۱}{\log_{۶}^{۵} + \log_{۶}^{۳}} = \frac{۱}{\frac{\log_{۳}^{۵}}{\log_{۳}^{۶}} + \frac{\cancel{\log_{۳}^{۳}}\,۱}{\log_{۳}^{۶}}}$ ۶

$= \frac{۱}{\frac{۲,۵}{۱\cancel{\log_{۳}^{۳}} + \log_{۳}^{۲}}} = \frac{۱}{\frac{۲,۵}{۱+\frac{۱۵}{۱۶}}} = \frac{۴}{۵} \times \frac{۱۳}{۸۴} = \frac{۱۳}{۲۵}$

$\log_{۸}^{۱۸} = m \Longrightarrow \frac{۲}{۳}\left(\cancel{\log_{۲}^{۲}} + \log_{۲}^{۹۳}\right) = \frac{۳m-۱}{۲} \to \log_{۲}^{۳} = \frac{۳m-۱}{۲}$

$\log_{۴}^{۱۲} = \frac{۱}{۲}\left(\cancel{\log_{۲}^{۲}} + \cancel{\log_{۲}^{۲}} + \log_{۲}^{۳}\right) = \frac{۳(m+۱)}{۴}$ ۷

$\left(\frac{۲}{۵}\right)^{۲x-۱} = \left(\frac{۵^{۲}}{۲^{۲}}\right)^{۳x^{۲}} = \left(\frac{۲}{۵}\right)^{-۳x^{۲}}$

$y \to -۳x^{۲} - ۲x + ۱ = ۰$ ۸

$\frac{۱}{۳}$ یا $\cancel{-۱}$

$\to \log_{x}^{۲} = \frac{۲}{۳}$

$\log_{۸}^{b} = \frac{۲}{۲}\left(۱ + \log_{۲}^{x}\right) \to b = ۳۶ \to \log ۳b - ۸ = ۲$

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$\frac{\frac{۱}{b}}{۴a} = \log ۴ = \frac{۴a}{b} \cdots \frac{b+c}{۲} \Rightarrow \cancel{\frac{۲b+۲c}{b}} \cdots ۱ + \frac{۲c}{b} = ۲\log ۲$

$\frac{b+c}{b} = \log^{۲} \to \frac{b}{۲c} = \frac{\log_{۲}^{۵}+۱}{۲}$

$\left(\frac{۱}{\sqrt[۳]{۲}}\right)^{\frac{c}{a}} = (۲)^{-\frac{۱}{۳}\times\frac{c}{\frac{b+c}{۲}}} = \frac{۲c}{b+c}$ ۱۰

$\frac{b}{۲c} = \frac{\log_{۲}^{۵}+۱}{-۲\log_{۲}^{۵}} \to \frac{۲c}{b} = \frac{-۲\log_{۲}^{۵}}{\log_{۲}^{۵}+۱} \to \frac{۲c}{b+c} = -۲\log_{۲}^{۵} \to \frac{۱}{۳}\cancel{۲}\log_{۲}^{۵}$

$= \cdots \quad ۵^{\log_{۲}^{۲^{\frac{۱}{۴}}}} \to \sqrt[۴]{۵}$