نام و نام خانوادگی ......حسین حاجی حسنی...... پاسخنامه تشریحی تکلیف شماره ...۲... کلاس ...B...

$x^a = m$ $\log_{x^{a+1}} x^{2a+1} = \frac{2a+1}{a+1} = b \Rightarrow [b] = 1$	۱
الف) $y = \sqrt{\frac{x}{\log_{\frac{1}{2}} x}}$ $x > 0,\ x \neq 1 \Rightarrow$ ... $,\ 0 < x < 1 \rightarrow D_f : (0,1)$ $x < 1$ $x^2 - x - 2 > 0 \Rightarrow x_1, x_2 = 2, -1 \Rightarrow$ (sign chart: $+$, $-$, $+$ at -1, 2) $x^2 \geq 1 \Rightarrow x \geq 1,\ x \leq -1$ $\xrightarrow{\cap} D_f : (-\infty, -1) \cup (2, +\infty)$	۲
$\underbrace{\log_3 a}_{t} + \log_a 3 = 2$ $t + \frac{1}{t} = 2 \Rightarrow t^2 - 2t + 1 = 0$ $(t-1)^2$ $1 \Rightarrow \log_3 a = 1 \Rightarrow \boxed{a = 3}$	۳
$\log \frac{5}{3} = \frac{3}{1}$ $\log 9 = \frac{8}{1}$ $\log 15 = \frac{11}{1}$ $3x^2 + 8x - 11 \rightarrow (x + \frac{11}{3})(x - 3)$ $-\frac{11}{3}$, 1 $\Rightarrow \lvert x_1 - x_2 \rvert = \boxed{\frac{14}{3}}$	۴
$\frac{\log_{2} 10}{\log_{2} 14} = \frac{\log_2 5 + \log_2 2}{\log_2 7 + \log_2 2}$ $\log 1 = 1$ 2.8 $= \frac{\log_2 5}{2.8} = \boxed{\frac{1}{1.4}}$	۵

$\dfrac{\log_2 24 \to \log_2 8 + \log_2 3}{\log_2 10 \to \log_2 2 + \log_2 5} \Rightarrow \dfrac{\frac{24}{14}}{\frac{25}{10}} = \dfrac{\frac{1}{10}\times 24 \ 12}{\frac{14}{42}\times 25 \ 5} = \dfrac{12}{20} = $ [illegible]	۶
$\log_8 18 = m \Rightarrow \log \dfrac{9\times 2\times 2}{2\times 2\times 2} = \log_2 3 = m$ $\log_4 12 = \frac{1}{2}\log_2 12 = \frac{1}{2}(\log_2 4 + \log_2 3) = 1 + \frac{m}{2} = \frac{2+m}{2}$	۷
$\left(\frac{2}{5}\right)^{-3x^2} = \left(\frac{2}{5}\right)^{2x-1} \Rightarrow 3x^2 + 2x - 1 = 0 \to x_1 = -1 \to$ غ ق ق ; $x_2 = \frac{1}{3}$ $\log_x 4 = \log_{\frac{1}{3}} 2 = \boxed{\frac{2}{3}}$	۸
$2^a = 3$ $8^{\frac{2}{3}} + 8^{\frac{2a}{3}} = b \Rightarrow 4 \times 9 = b \Rightarrow b = 36$ $\boxed{\log 100 = 2}$	۹
$\dfrac{\log a}{\log 2} = 2 - \dfrac{2}{\log 3}$ $\sqrt{x} = \dots = 2^{-\frac{3}{2}}$ $\dfrac{c}{a} = 2 - \dfrac{2}{\log 3} \to 2^{-\frac{3}{2}\left(2 - \frac{2}{\log 3}\right)}$	۱۰