نام و نام خانوادگی مهراد عباسی .... پاسخنامه تشریحی تکلیف شماره ۲۴ ...... کلاس یازدهم تجربی A ....

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$3^B = ?$

$3^{Ax+B} = x^2 \to \log_3^{x} = \frac{Ax+B}{2}$

$x=1 \nearrow A+B=0$

$x=3 \searrow 3A+B=2$

$A=1$, $B=-1$

$3^{-1} = \frac{1}{3}$

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$2^{2x} + 15 = 2^x \times 8$

$t = 2^x \to t^2 - 8t + 15 = 0$

$t_1 = 3$ ✓, $t_2 = 5$ ✓

$S = \log_2^3 + \log_2^5 = \log_2^{15}$

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$\log_{21}^3 \times \log_{21}^3 + (\log_{21}^7 + 1)(\log_{21}^3 + 2)$

$= \log_{21}^3 \times \log_{21}^3 + \log_{21}^7 \times \log_{21}^3 + \log_{21}^3 + 2\log_{21}^7 + 2$

$\log_{21}^3(\log_{21}^3 + \log_{21}^7) + 3 + \log_{21}^7 = 4$

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$2\log|x-1| + 3\log(1-x) = 5$

$2\log(1-x)$

$1-x \geq 0 \ (x \neq 1) \to 1-x > 0 \Rightarrow x-1<0$

$\to \log(1-x) = 1 \to 1-x = 10 \to x = -9$

$\log_3^{-x} = 2$

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

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

$(3-x)^3 = 10^3$ $\to x = -7$ $\to \log_{\frac{1}{\sqrt{2}}} 8 = 6$	6
$x^2 - 2 = 4x$ $x^2 - 4x - 2 = 0 \to x = \frac{4 \pm \sqrt{16+8}}{2} = 2 + \sqrt{6}$ $\to \log_{6} (x-2) = \frac{1}{2}$	7
$\frac{\log 2}{\log 3} = \frac{5k}{8k}$ $\quad 3\log_{18} 2 = 3\left(\frac{\log 2}{\log 2 + 2\log 3}\right)$ $= 3\left(\frac{5k}{5k+16k}\right) = \frac{5}{7}$	8
$\frac{\log 3}{2\log 2} = \frac{4}{5} \to \log 3 = 4k,\ \log 2 = \frac{5}{2}k$ $\log_{12} 6 = \frac{\log 3 + \log 2}{\log 3 + \log 2 + \log 2}$ $\to \frac{4 + 2.5}{5+4} = \frac{13}{18}$	9
$a\log 2 - a + b\log 2 = 0$ $\quad 2^{\frac{1}{2}\left(\frac{b}{a}\right)}$ $\log 2^{a+b} = a\log 10$ $\quad \log 10 - \frac{b}{a} = \log_2 5$ $2^{\frac{1}{2}\log_2 5} = \sqrt{5}$	10