نام و نام خانوادگی ....علیرضا جوانبخت........ پاسخنامه تشریحی تکلیف شماره ..۲۴.. کلاس ..یازدهم تجربی A........

۱

$f(1)=3^{A+B}=1$

$f(3)=3^{3A+B}=9$

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

$2A=2 \to A=1,\ B=-1$

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

$f(0)=3^{-1}=\frac{1}{3}$

$\left|\begin{matrix} 0 \\ \frac{1}{3} \end{matrix}\right)$

۲

$\log_2(4^x+15)=x+3 \to 2^{x+3}=2^{2x}+15 \to 2^x\times 8-2^{2x}=15 \xrightarrow{2^x=t}$

$8t-t^2=15 \to t^2-8t+15=0 \to (t-3)(t-5)=0 \to$

$t=3 \to 2^x=3$

$\log_2 2^x=\log_2 3 \to \boxed{x=\log_2 3}$

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

$\log_2 2^x=\log_2 5 \to \boxed{x=\log_2 5}$

۳

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

$t^2+(1+\log_{21}21-\log_{21}3\times(2+t))=t^2+((2-t)(2+t))=t^2+4-t^2=\boxed{4}$

۴

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

$(x-1)^2(1-x)^3=10^5 \to -(x-1)^2(x-1)^3=10^5 \to -(x-1)=10 \to x-1=-10,\ x=-9$

$\log_3(-x)=\log_3 9=2$

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$\log_2(x^2+2x+4)+\log_2(x-2)=\log_2 8 \to (x^2+2x+4)(x-2)=8 \longrightarrow$

$x^3+\cancel{2x^2}+\cancel{4x}-\cancel{2x^2}-\cancel{4x}-8=8 \to x^3=16 \to x=2^{\frac{4}{3}}$

$\log_{2^{\frac{1}{3}}}x \to \log_{2^{\frac{1}{3}}}2^{\frac{4}{3}} \to \frac{\frac{4}{3}}{\frac{1}{3}}\log_2 2=\boxed{4}$

$\log(2-x)-\log\frac{1}{(x-2)^2}=3 \rightarrow \frac{2-x}{\frac{1}{(x-2)^2}}=10^3 \rightarrow -(x-2)^2(x-2)=10^3$

$-(x-2)^3=10^3 \rightarrow -(x-2)=10 \rightarrow -x+2=10 \rightarrow -x=8$ ۶

$\log_{\sqrt{2}}^{(-x)}=\log_{2^{\frac{1}{2}}}^{2^3}=\frac{3}{\frac{1}{2}}\log_2^2=\boxed{6}$

$3^{x^2-2}=81^x \rightarrow 3^{x^2-2}=3^{4x} \rightarrow x^2-4x-2=0 \rightarrow \Delta=24$

$x=\frac{4\pm\sqrt{24}}{2}=2+\sqrt{6}\ ,\ \underbrace{2-\sqrt{6}}_{\text{غ ق ق}}$ ۷

$\log_6^{(x-2)} \rightarrow \log_6^{2+\sqrt{6}-2}=\log_6^{\sqrt{6}}=\boxed{\frac{1}{2}}$

$\log_{18}^8=\frac{\log_3^8}{\log_3^{18}}=\frac{3\log_3^2}{\log_3^9+\log_3^2}=\frac{3\left(\frac{5}{8}\right)}{2+\frac{5}{8}}=\frac{\frac{15}{8}}{\frac{21}{8}}=\frac{15}{21}=\boxed{\frac{5}{7}}$ ۸

$\log_3^2=\frac{5}{8}$

$\log_{12}^6=\frac{\log_4^6}{\log_4^{12}}=\frac{\log_4^3+\log_4^2}{\log_4^4+\log_4^3}=\frac{0.8+0.5}{1+0.8}=\frac{1.3}{1.8}=\frac{13}{18}$ ۹

$\log_4^3=0.8$

$(a\log 2)x^2+ax+b\log^2=0 \rightarrow a\log^2-a+b\log^2=0 \rightarrow \log^2(a+b)=a$

$\log 2=\frac{a}{a+b}=\frac{\log_{\sqrt{2}}^2}{\log_{\sqrt{2}}^{10}} \rightarrow \frac{a}{a+b}=\frac{2}{\log_{\sqrt{2}}^{10}} \rightarrow \log_{\sqrt{2}}^{10}=\frac{2a+2b}{a} \rightarrow 2+\frac{2b}{a}$ ۱۰

$(\sqrt{2})^2\times(\sqrt{2})^{\frac{2b}{a}}=10 \rightarrow 2\times(\sqrt{2})^{\frac{2b}{a}}=10 \rightarrow (\sqrt{2})^{\frac{2b}{a}}=5 \rightarrow \boxed{\sqrt{2^{\frac{b}{a}}}=\sqrt{5}}$