$$
\begin{aligned}
& \text { 17. } 948^{x-3}=13^{4 x+2} \\
& \log 948^{x-3}=\log 13^{4 x+2} \\
& (x-3) \log 948=(4 x+2) \log 13 \\
& x \log 948-3 \log 998=4 \times \log 13+2 \log 13 \\
& -4 \times \log 13+3 \log 948-4 \times \log 13+2 \log +3 \log 948 \\
& x(\log 948-4 \log 13)=2 \log 13+3 \log 948 \\
& X=\frac{2 \log 13+3 \log 948}{\log 948-4 \log 13}=\frac{\log 13^{2}+\log 948^{3}}{\log 948-\log 13^{4}}=\frac{\log \left(13^{2} \cdot 948^{3}\right)}{\log \left(\frac{848}{13^{4}}\right)} \\
& x x^{2}-7,5447 \\
& \text { (10) } \\
& 4^{3 p}=10 \\
& \log 4^{3 p}=\log 10 \\
& 3 p \log \cdot 4=\log 10 \\
& 3_{p}=\frac{\log 10}{\log 4} \\
& p=\frac{\log 10}{3 \log 4} \\
& P=\frac{\text { Ans }}{3}
\end{aligned}
$$

23. $\log _{6} \sqrt{5} \quad \log (r(5)) / \log 6$

$$
\begin{aligned}
\frac{\log \sqrt{5}}{\log b}=\frac{\log 5^{\frac{1}{2}}}{\log 6} & =\frac{\frac{1}{2} \log 5}{\log 6} \\
& =\frac{\log 5}{2 \log b}
\end{aligned}
$$

(11)

$$
\text { 11) } \begin{aligned}
3^{n+2} & =14.5 \\
\log 3^{n+2} & =\log 14.5 \\
(n+2) \log 3 & =\log 14.5 \\
n \log 3+2 \log 3 & =\log 14.5 \\
n \log 3 & =\log 14.5-2 \log 3 \\
n & =\frac{\log 14.5-2 \log 3}{\log 3} \\
n & \approx .4341
\end{aligned}
$$

