A. Information/Reminders

1. Impossible to take the log of a $\qquad$ or $\qquad$ .
2. When you raise both sides of an equation to $\frac{?}{\text { even } \#}$ or $\sqrt[\text { even }]{\# \text { ? }}$ include $\qquad$ in your answer.
3. Check for extraneous solutions whenever $\qquad$ both sides of an equation to an $\qquad$ power.
4. If the base is not indicated, it's $\qquad$
5. Rewrite in exponential form: $\log _{b} y=x \leftrightarrow$ $\qquad$ .
6. Complete the table below.

| Product Property | Quotient Property | Power Property |
| :--- | :--- | :--- |
| $\log _{b} m n=$ | $\log _{b} \frac{m}{n}=$ | $\log _{b} m^{n}=$ |

Unless otherwise stated, round to the nearest tenth.
B. Equations containing variables as the base.
$\rightarrow$ Reverse PEMDAS

1. $y^{\frac{3}{4}}-5=1$
2. $\sqrt[3]{x^{2}}-2=2$
C. Equations containing variables as the exponent.
$\rightarrow$ Simplify (Get base with exponent alone.)
$\rightarrow$ Log Both Sides
$\rightarrow$ Power Property
$\rightarrow$ Solve
3. $2+3^{x}=82$
4. $12^{x-1}-2=18$ (round to 4 decimal places)
D. Equations containing logs of variables.
$\rightarrow$ Shrink Using Properties
$\rightarrow$ Rewrite in Exponential Form
$\rightarrow$ Solve
5. $\log 6-\log (3 x)=-2$
6. $\quad \log (x+21)+\log x=2$
