

The fraction $\frac{64x}{16y}$ is correctly simplified to $\frac{4x}{y}$. However, this does not use any of the properties of logarithms, and you can simplify $\log_4 \frac{4x}{y}$ further. You can use the quotient rule to rewrite it as $\log_4 4x - \log_4 y$. Rewrite further, using the product property on the first term.