

Definitions and Rules of logarithms:

- $\log_b x = y$ if and only if _____ where $x > 0$.
- $\log_b (AB) =$ _____
- $\log_b \left(\frac{A}{B}\right) =$ _____
- $\log_b (A^n) =$ _____
- $b^{\log_b x} =$ _____
- Change of base formula. Change to base 10: $\log_b x =$ _____

Rules for Exponents:

- $b^n b^m =$ _____
- $(b^n)^m =$ _____
- $(ab)^n =$ _____
- $b^{x+y} =$ _____
- $b^{xy} =$ _____

Use your calculator to find the value of y to three decimal places if $x = 8$.

1. $y = 2.5 + 3\log x$ _____ 2. $y = 5 - 2\ln x$ _____ 3. $\sqrt{y} = 3 + 2x$ _____

4. $y^2 = 4 + 2.6x$ _____ 5. $\log y = 2.5 - 0.5x$ _____ 6. $\ln y = 1 + 0.25\ln x$ _____

Solve for y in terms of x . Write in the form $y = a(b)^x$ or as $y = a(x)^b$ where a and b are constants.

7. $\ln y = 3 + 5x$ _____ 8. $\ln y = 2 + 3\ln x$ _____