Logarithm properties

$y = a^x \longleftrightarrow \log_a y = x$

$\log_c 1 = 0$

$\log_c c = 1$

$\log x \in \mathbb{R}$, if $x > 0$

$\log(A \cdot B) = \log A + \log B$

$\log\left(\frac{A}{B}\right) = \log A - \log B$

$\log_a b^c = c \cdot \log_a b$

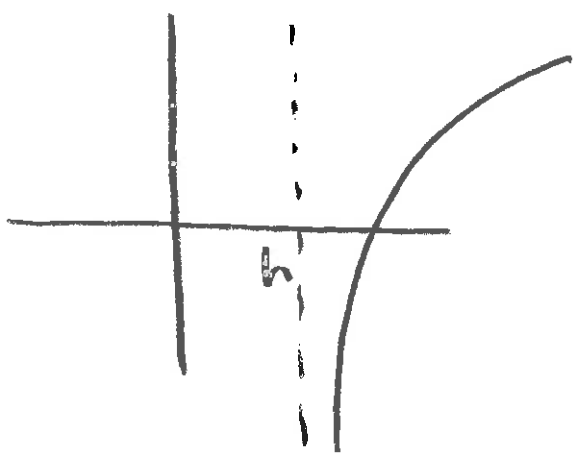
$\log x = \log_{10} x$

$\log_b a = \dfrac{\log a}{\log b}$

$\ln x = \log_e x \qquad \ln e = 1$

$b^{\log_b x} = x$

graph: $y = a \log_b (x-h) + k$



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