The Natural Logarithmic Function

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Def^n. The natural logarithmic function is

$$f(x) = \log_e(x),$$

where the base is "e".

It is always denoted by $\ln(x)$ i.e.

$$f(x) = \boxed{\ln(x)}.$$

Remark. $\ln(e^x) = x$, $\forall x \in \mathbb{R} = Dom(e^x)$

$e^{(\ln x)} = x$ $\forall x \in (0,\infty) = Dom(\ln x)$

Common Logarithm

$\boxed{\log x} = \boxed{\log_{10}(x)}$

$\boxed{\ln x = \log_e x}$

$\boxed{\ln}$ $\boxed{\log}$