

## Precalculus

# Logarithm notation and the infamous notation $\log x$

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- $\log$  and  $\ln$  have different domains but else coincide:  $\ln$  is defined for positive reals, and  $\log$  - for non-zero complex.



- *In the present course we shall abstain from using the notation  $\log x$ .*
- *When we need logarithms base 10 we will always write  $\log_{10}$ .*
- Within this course, we request that the student abstain from using  $\log x$  and use instead the unambiguous  $\log_{10} x$ .
- Outside of this course, we recommend that the student continue avoiding the notation  $\log$ .
- Should our recommendation contradict the commonly accepted conventions in the field of study of the student, we expect the student to honor the conventions of their fields of study.

# Summary of logarithm notation conventions

	Name	ISO notation	Other notation	Used in
$\log_2(x)$	binary logarithm	$\text{lb}(x)$	$\text{ld}(x)$ , $\log(x)$ , $\text{lg}(x)$	computer science, information theory, music theory, photography
$\log_e(x)$	natural logarithm	$\ln(x)$	$\log(x)$	mathematics, physics, chemistry, statistics, economics, information theory, and engineering
$\log_{10}(x)$	common logarithm	$\text{lg}(x)$	$\log(x)$	various engineering, logarithm tables, handheld calculators, spectroscopy

Table source: Wikipedia

- Standardized in ISO\_31-11 (International Standards Organization).