

# lesson mathematics basics

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This is a minimal working example written in Markdown. To update preview, you can either use the shortcut `Ctrl + Enter` or click the `update preview` submenu under the `Preview` menu in the toolbar.

## Math formula

Anything between two `$` characters will be treated as TeX math, for example,  $x^2 + y^2 = z^2$ . For display math, use `$$` delimiters.

## Numbering and referencing

For any real number  $x$ , we have

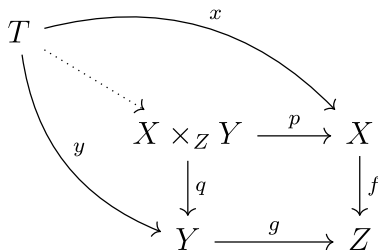
$$\exp(ix) = \sum_{k=0}^{\infty} \frac{(ix)^k}{k!} \quad (1)$$

$$= \cos x + i \sin x. \quad (2)$$

The equation (1) is the power series definition of the exponential function, and the equation (2) is known as Euler's formula.

## LaTeX package

To use a LaTeX package, include it in the `latex preamble` submenu under the `Meta` menu. Here is an example of using `tikz-cd` package:



# Theorem-like environment

**Thm 1 (Fermat's Last Theorem)** No three positive integers  $a$ ,  $b$ , and  $c$  satisfy the equation  $a^n + b^n = c^n$  for any integer value of  $n$  greater than 2.

**Fermat's lost proof** I have a proof of this theorem, but there is not enough space. □

You need not remember the exact syntax, the editor will help you with that.

## Bibliography

Einstein's journal paper (Einstein 1905) and Dirac's book (Dirac 1981) are physics-related items.

## Reference

Dirac, Paul Adrien Maurice. 1981. *The Principles of Quantum Mechanics*. International Series of Monographs on Physics. Clarendon Press.

Einstein, Albert. 1905. "Zur Elektrodynamik bewegter Körper. (German) [On the Electrodynamics of Moving Bodies]." *Annalen Der Physik* 322 (10): 891–921.