

My first LaTeX document

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We have now added a title, author and date to our first \LaTeX document!

Some of the **greatest** discoveries in science were made by ***accident***

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Figure 1: A nice plot

As you can see in figure 1, the function grows near the origin. This example is on page 1.

- The individual entries are indicated with a black dot, a so-called bullet.
- The text in the entries may be of any length.

*Funded by the Overleaf team.

1. This is the first entry in our list.
2. The list numbers increase with each entry we add.

In physics, the mass-energy equivalence is stated by the equation $E = mc^2$, discovered in 1905 by Albert Einstein.

$E = mc^2$ is typeset in a paragraph using inline math mode—as is $E = mc^2$, and so too is $E = mc^2$.

The mass-energy equivalence is described by the famous equation

$$E = mc^2$$

discovered in 1905 by Albert Einstein.

In natural units ($c = 1$), the formula expresses the identity

$$E = m \tag{1}$$

Subscripts in math mode are written as a_b and superscripts are written as a^b . These can be combined and nested to write expressions such as

$$T_{j_1 j_2 \dots j_q}^{i_1 i_2 \dots i_p} = T(x^{i_1}, \dots, x^{i_p}, e_{j_1}, \dots, e_{j_q})$$

We write integrals using \int and fractions using $\frac{a}{b}$ $\frac{a}{b}$. Limits are placed on integrals using superscripts and subscripts:

$$\int_0^1 \frac{dx}{e^x} = \frac{e-1}{e}$$

$$\int_0^1 \frac{dx}{e^x} = \frac{e-1}{e}$$

Lower case Greek letters are written as ω δ etc. while upper case Greek letters are written as Ω Δ .

Mathematical operators are prefixed with a backslash as $\sin(\beta)$, $\cos(\alpha)$, $\log(x)$ etc.

1 First example

The well-known Pythagorean theorem $x^2 + y^2 = z^2$ was proved to be invalid for other exponents, meaning the next equation has no integer solutions for $n > 2$:

$$x^n + y^n = z^n$$

2 Second example

This is a simple math expression $\sqrt{x^2+1}$ inside text. And this is also the same: $\sqrt{x^2+1}$ but by using another command.

This is a simple math expression without numbering

$$\sqrt{x^2+1}$$

separated from text.

This is also the same:

$$\sqrt{x^2+1}$$

...and this:

$$\sqrt{x^2+1}$$

Abstract

This is a simple paragraph at the beginning of the document. A brief introduction about the main subject.

After our abstract we can begin the first paragraph, then press "enter" twice to start the second one.

This line will start a second paragraph.

I will strt the third paragraph and then add a manual line break which causes this text to start on a new line but remains part of the same paragraph. Alternatively, I can use the `\newline` command to start a new line, which is also part of the same paragraph.

cell1	cell2	cell3
cell4	cell5	cell6
cell7	cell8	cell9

$$\alpha\beta\gamma\rho\sigma\delta\epsilon$$
$$\times\otimes\oplus\cup\cap$$
$$<>\subset\supset\subseteq\supseteq$$
$$\int\oint\sum\prod$$
$$a_{n_i}\prod_{i=1}^n$$

$$\sum_{i=1}^{\infty}\frac{1}{n^s}=\prod_p\frac{1}{1-p^{-s}}$$

$$\cos\csc\exp\ker\limsup\min\sinh\arcsin$$
$$\ln$$