My first LaTeX document

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Abstract

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

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

1 Font Style

Some of the **greatest** discoveries in <u>science</u> were made by ***accident***.
Some of the greatest *discoveries* in science were made by accident.
Some of the greatest discoveries *in science were made by accident.*
Some of the greatest *discoveries* in science were made by accident.

2 Image and Figure

The universe is immense and it seems to be homogeneous, on a large scale, everywhere we look.

There's a picture of a galaxy above.
As you can see in figure 1, the function grows near the origin. This example is on page 2.

Figure 1: Wepay

3 List

- The individual entries are indicated with a black dot, a so-called bullet.

- The text in the entries may be of any length.

1. This is the first entry in our list.

2. The list numbers increase with each entry we add.

4 Math mode

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

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

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

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

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.

5 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 $n > 2$:

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

6 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:
$$\sqrt{x^2 + 1}$$

7 New Line

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 start 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.

8 Table

cell1	cell2	cell3
cell4	cell5	cell6
cell7	cell8	cell9

cell1	cell2	cell3
cell4	cell5	cell6
cell7	cell8	cell9

Col1	Col2	Col2	Col3
1	6	87837	787
2	7	78	5415
3	545	778	7507
4	545	18744	7560
5	88	788	6344

Table 1 shows how to add a table caption and reference a table.

Col1	Col2	Col2	Col3
1	6	87837	787
2	7	78	5415
3	545	778	7507
4	545	18744	7560
5	88	788	6344

Table 1: Table to test captions and labels.

9 Comments