# Simple LaTeX document

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**Summary**

A short document, showing some basic features of LaTeX.

# Contents

# 1 Main Section

I can make sections

With Babel I can typeset funky languages: Ἐγώγε γαρ γρὰφω.
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## 1.1 Main Subsection

I can make subsections.

### 1.1.1 Main Subsubsection

I can make subsubsections easily.

### 1.1.2 Limitations

For some reason I cannot make subsubsubsections.

## 1.2 Mathematics

One of the major benefits of LaTeX is its support for math equations. These can be like $E = mc^2$ (ie, embedded in text), or on their own

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2} \tag{1}$$

We can refer to Equation 1 and have it do cross-references for us.

Often we want an equation but don't want that number. Then you can use (note the Greek symbols),

$$\pi = \frac{c}{d}$$

Sometimes it's useful to line things up. We can do this:

$$\begin{aligned} e &= \lim_{n\to\infty} \left(1 + \frac{1}{n}\right)^n \\ &\approx 2.717 \end{aligned}$$

Take away the "*" to make it add numbers as before. Note that you need the `amsmath` package for `align`. Paragraphs are simply separated by a blank line. You might like to format something in math mode but in regular text, for example, $V_{\text{a very long subscript}}$ is clearer than $V_{averylongsubscript}$, where the computer considers each letter as a variable. This requires `amsmath` also.

Generally you can find whatever you're looking for online or in one of the LaTeX books. It automatically does bibliographies, list of figures, and list of tables. If you can think of a feature, chances are it does it.

| heading 1 | heading 2 | heading 3 |
|---|---|---|
| cell 1 | cell 2 | cell 3 |
| cell 4 | cell 5 | cell 6 |
| cell 7 | cell 8 | cell 9 |

Table 1: A boring table

Table 1 demonstrates using a table. Note that "tilde" (~) means "non-breaking space." You can use "verb" `to␣format␣stuff␣exactly` using any delimeter. Remove the "*" to `use normal spaces`.

LaTeX has powerful programming capabilities; you can define your own functions, use conditionals, etc. Read a book for details.