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## Document Class Set

We set options for specifying an A4 paper size with the **oneside** option for one-sided printing and a font size of 11 pt. Finally, we chose to have a full line between paragraphs in the output to distinguish paragraphs easily by adding the **parskip=full** option. The default setting is no space between paragraphs but a small indentation at the beginning of a paragraph.

## 1 section and addsec

While the **section** command starts numbered sections, we can have an unnumbered section by the starred **section\*** version. However contrary to **section\***, the **addsec** command generates an entry in the table of contents.

The empty line tells LaTeX to make a paragraph break.

- a table of contents,
- a bulleted list,
- headings and some text and math in section,
- referencing such as to section 2 and equation (1).

## 2 Some maths, label and ref

We use a **label** command to set an invisible anchor mark so that we could refer to it using its label name by the **ref** command and get the equation number in the output.

It is a good practice to use prefixes to identify kinds of labels, such as *eq:name* for equations, *fig:name* for figures, *tab:name* for tables, and so on. Avoid special characters in names, such as accented characters.

Why did we have to compile it twice? When you use the **label** command, LaTeX writes that position to the *.aux* file. In the next compiler run, the **ref** command can read this and put the correct reference into the text.

When we write a scientific or technical document, we usually include math formulas. To get a brief glimpse of the look of maths, we will look at an integral approximation of a function  $f(x)$  as a sum with weights  $w_i$ :

$$\int_a^b f(x) dx \approx (b - a) \sum_{i=0}^n w_i f(x_i) \quad (1)$$