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# Intro to L<sup>A</sup>T<sub>E</sub>X: Learn to write beautiful math equations Part 1

Hello world! The stuff before the begin document is the preamble. Let's begin with a formula  $e^{i\pi} + 1 = 0$ . Backslash is a command. A formula with single dollar signs is called an inline formula.

1. But we can also do

$$e = \lim_{n \rightarrow \infty} \left(1 + \frac{1}{n}\right)^n = \lim_{n \rightarrow \infty} \frac{n}{\sqrt[n]{n!}}.$$

2. We can do another:

$$e = \sum_{n=0}^{\infty} \frac{1}{n!}.$$

3. We can also use continued fractions

$$e = 2 + \frac{1}{1 + \frac{1}{2 + \frac{1}{3 + \frac{1}{4 + \frac{1}{5 + \ddots}}}}}}.$$

\* in front of section will get rid of the number. amsmath gives you multiple integrals, vectors, and matrices. Use % for comments.

## More Formulas

$$\int_a^b f(x) dx$$

$$\iiint f(x, y, z) dx dy dz$$

$$\vec{v} = \langle v_1, v_2, v_3 \rangle$$

$$\vec{v} \cdot \vec{w}$$

$$\begin{bmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \end{bmatrix}$$

