LeiTex Tutorial

By Lomi

September 12, 2020

Different font styles

Normal text = Normal Text
\textbf{Bold Text} = **Bold Text**
\textit{Italic text} = *Italic text*
\underline{Underlined Text} = Underlined Text
this is a waved underleine

This is a normal sized text.
Normal size text \Large Large text = Normal size text Large ljasdlja text
Normal size text \tiny tiny text = Normal size text tiny text
\

\textrm{Default (Roman) text} = Default (Roman) text
\textsf{Sans serif text} = Sans serif text
\texttt{Typewriter text} = `Typewriter text`

Text Justification and Alignment

This is a fully justified text and spread out so that it stretches to fill the entire width of the page. notice that left and right margins are perfectly straight. This is a fully justified text and spread out so that it stretches to fill the entire width of the page. notice that left and right margins are perfectly straight.

Center justified text is aligned down the center of the page. The spacing between the words is not strached out, which leads to ragged margins on the left and right. Center justified text is aligned down the center of the page. The spacing between the words is not strached out, which leads to ragged margins on the left and right

Left justified text is aligned with the left margin. The spacing between the words is not strecthed out, which leads to a ragged margin on the right. Left justified text is aligned with the left margin. The spacing between the words is not strecthed out, which leads to a ragged margin on the right.

Right justified text is aligned with the right margin. The spacing between the words is not strecthed out, which leads to a ragged margin on the left. Right justified text is aligned with the right margin. The spacing between the words is not strecthed out, which leads to a ragged margin on the left.

Display Math Mode

When math equations creates a separate section on the paragraph usually centered

```
\begin{align}
2x + 1 &= 9 & 3y - 2 &= -5 & -5z + 8 &= 3
    2x &= 8 & 3y &= -3 & -5z &= -5
     x &= 8 & y &= -1 & z &= -1
\end{align}
```

$$\begin{aligned} 2x + 1 &= 9 & 3y - 2 &= -5 & -5z + 8 &= 3 && (1)\\ 2x &= 8 & 3y &= -3 & -5z &= -5 && (2)\\ x &= 8 & y &= -1 & z &= -1 && (3) \end{aligned}$$

using align* removes the line numbering from the equation

$$\begin{aligned} 2x + 1 &= 9 & 3y - 2 &= -5 & -5z + 8 &= 3\\ 2x &= 8 & 3y &= -3 & -5z &= -5\\ x &= 8 & y &= -1 & z &= -1 \end{aligned}$$

$$\sum_{n=1}^{\infty} \frac{1}{n^2} = \frac{\pi^2}{6}$$

Inline or Text Style Math Mode

When math equations are in line with the paragraph

Notice that by substitution we get the equation $f(x) = x^2 + 4x + 5$ This is a quadratic function x, and we can identify the vertex by completing the square... $\sum_{n=1}^{\infty} \frac{1}{n^2} = \frac{\pi^2}{6}$

The variable \(x \) = The variable x

The letter x = The letter x

Basic Notation

Arithmetic

1 + 1 = $1 + 1$

5 - 3 = $5 - 3$

6 \cdot 4 = $6 \cdot 4$

6 \times 4 = 6×4

27 \div 9 = $27 \div 9$

Fractions

\frac{numerator}{denominator}

$\frac{numerator}{denominator}$

$$\frac{numerator}{denominator}$$

$\frac{numerator}{denominator}$

Superscript and Subscript

Superscript ^Caret x^2 = x^2

Subscript _ Underscore a_1 = a_1

Example Code: a_1^2 = a sub 1 squared = a_1^2

Example Code: a_2^1 = a squared sub 1 = a_1^2

Multiple superscripts should be grouped by brackets

With brackets: e^{kx} = e^{kx}

Without brackets: e^kx = e^kx

Parentheses

(\sum_{n=0}^N (\frac{1}{a+b}^2) ^2) = $(\sum_{n=0}^{N}(\frac{1}{a+b}^2)^2$

\left(\sum_{n=0}^N \left(\frac{1}{a+b}^2 \right) ^2 \right) $\left(\sum_{n=0}^{N}\left(\frac{1}{a+b}\right)^2\right)^2$

(a) \big(a \big) \bigg(a \bigg) \Bigg(a \Bigg)

(a) $\big(a\big)$ $\bigg(a\bigg)$ $\Bigg(a\Bigg)$

Tables and Arrays

left	center	right
l	c	r

left	center	right
l	this is a very very long text that cannot fit just 4 centimeters of width	r

left	center	right
l	this is a very very long text that cannot fit just 4 centimeters of width	r

left	center	right
l	c	r

left	center	right
l	c	r

$$\begin{array}{lll} a_1 1 & a_1 2 & a_1 3 \\ a_2 1 & a_2 2 & a_2 3 \end{array}$$

$$\begin{pmatrix} a_1 1 & a_1 2 & a_1 3 \\ a_2 1 & a_2 2 & a_2 3 \\ a_2 1 & a_2 2 & a_2 3 \\ a_2 1 & a_2 2 & a_2 3 \\ a_2 1 & a_2 2 & a_2 3 \end{pmatrix}$$

$$\begin{bmatrix} a_1 1 & a_1 2 & \cdots \\ a_2 1 & a_2 2 & \cdots \\ \vdots & \cdots & \ddots \end{bmatrix}$$