

Math Test

November 19, 2009

1 Limit

A limit:

$$\lim_{x \rightarrow \infty} f(x),$$

which should appear as $x \rightarrow \infty$ in italics, and «lim» in plain style. Inlined: $\lim_{x \rightarrow \infty} f(x)$.

And why not, a sum:

$$\sum_{i=1}^{\infty} x,$$

where the sum's limits should appear below ($i = 1$) and above (∞) the Σ . Inlined: $\sum_{i=1}^{\infty} x$. Integral: $\int_{i=1}^{\infty} x$.

2 Numeration

Equations can be numbered, like 2.1.

$$y = x \tag{2.1}$$

And also like 2.2.

$$x = 3 \tag{2.2}$$

Notice that eq. 2.2 comes after eq. 2.1.

Some equations can also be numbered, even if they don't have a label.

$$x = 2y \tag{2.3}$$

Other equations that contain * should not be numbered, but perhaps aligned:

$$\begin{array}{ll} \textit{left} & \textit{right} \end{array}$$

Now a random environment: xy .

3 Parentheses

Some delimiters also taken from the Spanish Lyx User's Guide. Array:

$$\left[\begin{array}{cc} 12 & 2 \\ 3 & 4 \times y^x \end{array} \right]$$

And inline array $\left[\begin{array}{cc} a & b \\ c & dio \end{array} \right]$.

There are also big brackets: $(a) [b] \{c\} \langle d \rangle |e| \langle f \rangle$.

4 Fraction

A big recursive fraction:

$$\frac{1}{\left(1 + \left(\frac{1}{1 + \left(\frac{1}{1 + 2x}\right)}\right)\right)}$$

A nice fraction: $\frac{5}{6}$.

A non-diminishing fraction containing alignments:

$$\frac{1}{1 + \left(\frac{1}{1 + x} \times \frac{1}{1 + x}\right)}.$$

5 Roots

A square root: $\sqrt{3}$. A more complex square root in a fraction:

$$\frac{1}{\left(1+\sqrt{2}\left(\frac{1}{1+\sqrt{2}}\right)+\sqrt{\frac{1}{2}}\right)}.$$

Higher order roots: $\sqrt[3]{x+y}$, $\sqrt[x+1]{Weight}$. In a fraction:

$$\frac{\sqrt[7/8]{\frac{8}{4}x}}{\sqrt[s+5]{\frac{(78x+45y)\times\sqrt{Height}}{\sin(x+1)}}+5}.$$

6 Cases

Used to switch several values.

$$y = \begin{cases} x & i = 0, \\ x + 1 & i < 3 \end{cases}$$

7 Spacing

The command `\raisebox` is useful to, surprisingly, raise a little box.

raised^{*over*}lowered and back.

It can also be used just for spacing.

B^V .

There are other spacing commands, like `\hspace: " "`, and `\vspace: ""`.

8 Fonts

Fonts can be switched on and off.

By default, text in formulae is shown italicized. Variable: *meters*.

Some font styles. Roman: $\mathrm{1}$. Sans serif: $\mathsf{2}$. Typewriter: $\mathtt{3}$.

Bold: $\mathbf{4}$.

Regular text. Normal text: $\mathrm{5}$. Literal text: $\mathtt{6}$. Phonetic alphabet:

$\mathrm{7abcde}$. Regular text can be embedded into formulae: regular text $\backslash\mathrm{command}$ $\backslash\mathrm{another\ command}$ $\backslash\mathrm{no\ space}$.

Units can be shown with or without a magnitude. Without: km . With: $\mathrm{57\ km}$.

Fractional units: $\mathrm{20\ km/h}$. With a fraction before the units: $\mathrm{\frac{3}{2}\ km}$, $\mathrm{\frac{7}{16}\ s}$.

Some special fonts are supported: \mathcal{F} , \mathscr{F} , \mathbb{F} , \mathfrak{F} .

9 Bye-bye

That's all folks!