Ein paar Tests

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1 tests

Inline math $E = mc^2$ is here. Not inline math is

$$E = mc^2$$

is here.

Subscript:

$$a_1$$

superscript:

$$a^2$$

both:

$$a_1^2$$

The scripts above were written in one line all together, but because the math is not in $s it does not work, here is the same thing with them.

Subscript: a_1 superscript: a^2 both: a_1^2

Some symbols: $\int, \cup, \cap, \oint, \coprod$.

Nested sub-&superscript:

$$(a^n)^{r+s} = a^{nr+ns}$$

2 more complicated maths

$$\lim_{h \to 0} \frac{f(x+h) - f(x)}{h}$$

$$\sum_{i=1}^{\infty} \frac{1}{n^s} = \prod_{p} \frac{1}{1 - p^{-s}}$$

$$\sin(a+b) = \sin(a)\cos(b) + \cos(a)\sin(b)$$

$$\lim_{h \to 0} \frac{f(x+h) - f(x)}{h}$$

3 now some stuff with amsmath

$$\binom{n}{k} = \frac{n!}{k!(n-k)!}$$

Fractions can be used alongside the text, for example $frac12$, and in a mathematical display style like the one below:

$$\frac{1}{2}$$

Fractions can also be nested inside of each other:

$$a_0 \cfrac{1}{a_1 + \cfrac{1}{a_2 + \cfrac{1}{a_3 + \cdots}}}$$

LaTeXhas some brackets:
(x+y) [x+y] {x+y} $\langle x+y \rangle$ |x+y| $\|x+y\|$

$$F = G\left(\frac{m_1 m_2}{r^2}\right)$$

4 matrices, but still no idea what they even do

$\begin{matrix} 1 & 2 & 3 \\ a & b & c \end{matrix}$, $\begin{pmatrix} 1 & 2 & 3 \\ a & b & c \end{pmatrix}$, $\begin{bmatrix} 1 & 2 & 3 \\ a & b & c \end{bmatrix}$, $\begin{Bmatrix} 1 & 2 & 3 \\ a & b & c \end{Bmatrix}$
The matrices above are from left to right:
matrix, pmatrix, bmatrix and Bmatrix.

5 practice

Goal is to do the practice without the internet,
just with the notes above and common sense.

1:

$$Loss = Bias^2 + Variance^2 + noise$$

2:

$$Chi = \frac{(y - y^2)}{\sqrt{x}} = \frac{\delta}{\sqrt{y}}$$

Had to look up how to square-root something, i assumed root, not sqrt.

3:

$$f(x) \leftarrow \frac{\Sigma f(x)}{k}$$

$$DE(x_i, x_j) = \sqrt{(x_i - x_j)^2 + (y_{xi} - y_{xj})^2}$$

4:

$$\frac{1}{1 + e^{-(wx+b)}}$$

5:

$$R^2 = \frac{n\Sigma xy - \Sigma x.\Sigma y}{\sqrt{(n\Sigma x^2 - (\Sigma x)^2).(n\Sigma y^2 - (\Sigma y)^2)}}$$

other tests

$$\sqrt{x} = x^{\frac{1}{2}}$$