

L^AT_EX-workshop (Exercises)

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1 New document

1. Begin a L^AT_EX-document with the text *Hello world!*

2 Text

1. Look up a short explanation of the definition of L^AT_EX on the internet (one sentence), and cite this sentence. Use a `\footnote{}`¹ to refer to your source, and optionally a `\url{}` (for this, you need to include the ‘url’ package).
2. Look up how to create accents (on the internet), such as in naïveté, café, façade, etc. Also look at the difference between ‘tekst’ and ‘tekst’ (pay attention to the accents)
3. Some characters, such as { already have a meaning within L^AT_EX. How do you think you could display these characters in the PDF? Tip: what do the commands look like by default?
4. Try out the different lists and other things explained in instructions yourself, and try, for example, to create a new type of list.
5. Create a few new commands yourself. You do this by putting `\newcommand{ }{ }` in the preamble. The first argument is the name of your command (for example `\R`), and the second argument is the command that should be executed by it (for example `\mathbb{R}`).

3 Mathematical environment

1. Reproduce the following formulas. Pay attention to the braces!

(a)

$$a_{1,1} + a_{1,2} + \dots + a_{1,n} = \sum_{i=1}^n a_{1,i}$$

(b)

$$1 \in \left\{ x \mid \mathbb{R} \setminus 2^{3^4} \right\}$$

¹This is a footnote

(c)

$$\lim_{n\rightarrow\infty}2^{-n}=0$$

(d)

$$\log_2(x\cdot y)\vee\log_4(x\cdot y)$$

(e)

$$\{(a,b)\in\mathbb{Z}^2:b\neq 0\}\ni(0,1)$$

(f)

$$\overrightarrow{AB_{\pm}}=\langle a,\pm b\rangle\neq a\mathbf{i}\mp b\mathbf{j}$$

(g) Pay attention to the space between '\exists' and '\eta'! Hint: use `\stackrel{\text{rel}}{\{...\}\{...\}}` and `\mathcal{A}`

$$\exists \eta: \mathcal{A} \hookrightarrow \mathcal{B}, \zeta: \mathcal{B} \hookrightarrow \mathcal{A}$$

$$\Updownarrow$$

$$\exists \beta: \mathcal{A} \xrightarrow{\sim} \mathcal{B}$$

(h) `\underbrace`

$$\forall A,B\in V: \underbrace{\neg(A\wedge B)}_{\text{not } A \text{ and } B} \iff \underbrace{(\neg A)\vee(\neg B)}_{\text{not } A \text{ or not } B}$$

(i)

$$f:A\cup B\rightarrow\{0,1\} \text{ with } A\cap B=\emptyset \text{ defined by } x\mapsto \begin{cases} 0 & \text{if } x\in A \\ 1 & \text{if } x\in B \end{cases}$$

(j)

$$\binom{k}{n}=\prod_{l=1}^n\frac{k-l+1}{l}$$

(k)

$$\Omega\setminus\left[\bigcup_{i\in I}\left(\bigcup_{j\in J}A_{i,j}\right)\right]\subseteq\left(\bigcap_{\substack{i\in I\\j\in J}}A_{i,j}\right)^c$$

(l) ²

$$A=\left(\begin{array}{cccccc} \dot{t} & 0 & 0 & \dots & 0 & 0 \\ 0 & t & 0 & \dots & 0 & 0 \\ 0 & 0 & \dot{t} & \dots & 0 & 0 \\ \vdots & \vdots & \vdots & \ddots & \vdots & \vdots \\ 0 & 0 & 0 & \dots & t & 0 \\ 0 & 0 & 0 & \dots & 0 & \dot{t} \end{array}\right)\bigg|_{t=0}$$

²Pay attention to the dots!



Figuur 1: DLF-logo

4 Inserting images

Begin this chapter on a new page. Add an image to the top of the page, with a caption, as shown above. Also place two images exactly here in the middle of a sentence.



(a) Description 1



(b) Description 2

5 References

1. Choose your three favorite equations from Chapter 3, and make a reference to them, such as 1a.
2. Make sure that there is a footnote (or several) on every page of your PDF. ³
3. Create a short bibliography with
 - A reference to your favorite calculus book
 - A reference to a university webpage

³Just like in this file