

Week 3: Getting started

T_EXniCie

26 oktober 2021


```

Lorem ipsum \tiny dolor sit amet, consectetur adipiscing
elit. Phasellus elementum, lacus quis tempus
scelerisque, elit diam vulputate ex, semper elementum
massa odio in ante.

```

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Phasellus elementum, lacus quis tempus scelerisque, elit
 diam vulputate ex, semper elementum massa odio in ante.

```

Lorem {ipsum \tiny dolor sit ame}t, consectetur
adipiscing elit. Phasellus {elementum}, lacus quis
tempus scelerisque, {elit diam vulputate ex, semper}
elementum massa odio in ante.
    
```

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Phasellus elementum, lacus quis tempus scelerisque, elit diam vulputate ex, semper elementum massa odio in ante.

Code	Resultaat	Code	Resultaat
<code>\{</code>	{	<code>{</code>	Begin groep
<code>\}</code>	}	<code>}</code>	Eindig groep
<code>\%</code>	%	<code>%</code>	Comment
<code>_</code>	—	<code>_</code>	Betekenis voor wiskunde
<code>\textasciicircum</code>	^	<code>^</code>	Betekenis voor wiskunde
<code>\\$</code>	\$	<code>\$</code>	Wiskundemodus
<code>\textbackslash</code>	\	<code>\</code>	Commando
<code>\&</code>	&	<code>&</code>	Kolomscheiding
<code>\#</code>	#	<code>#</code>	Parameter
<code>\textgreater</code>	>	<code>></code>	>
<code>\textless</code>	<	<code><</code>	<

Comments

```
% Make soul package work in beamer presentations
% Source: https://tex.stackexchange.com/...
\let\UL\ul
\makeatletter
\renewcommand\ul{
  \let\set@color\beamerorig@set@color
  \let\reset@color\beamerorig@reset@color
  \UL
}
...
```

Comments

```
% TODO Translate to English
\section{Nonsense}

Lorem ipsum dolor sit amet,
\textfb{ornare} sit amet.

\subsection{About  $\sqrt{2}$ }
```

Error! Undefined control sequence

Comments

```
% TODO Translate to English
\section{Nonsense}

%Lorem ipsum dolor sit amet,
%\textfb{ornare} sit amet.
%
%\subsection{About  $\sqrt{2}$ }
```

1 Nonsense

Comments

```
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Comments

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% TODO Translate to English
\section{Nonsense}

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\subsection{About  $\sqrt{2}$ }
```

1 Nonsense

Lorem ipsum dolor sit amet,
ornare sit amet.

1.1 About $\sqrt{2}$


```
\newcommand\aa{aa: ()}  
\newcommand\bb[1]{bb: (#1)}  
\newcommand\cc[2]{cc: (#1,#2)}  
\newcommand\dd[3]{dd: (#1,#2,#3)}  
\newcommand\ee[3][Z]{ee: (#1,#2,#3)}
```

Lorem aa: (), bb: (A), cc: (A,B), dd: (A,B,C), ee: (Z,A,B), ee: (A,B,C), ee: (Z,A,B)C.

\newcommand

```
\newcommand\co{CO$_2$}
\newcommand\term[1]{\textcolor{blue}{\textit{\textit{#1}}}}
```

```

Lorem ipsum \co{} dolor sit amet \co.
Duis \term{iaculis} id orci eu mattis.
\term{Suspendisse facilisis.}
```

Lorem ipsum CO₂ dolor sit amet CO₂. Duis *iaculis* id orci eu mattis.
Suspendisse facilisis.

```
\newcommand\genummerd[3][.]{\textbf{#2}\leaders
\hbox{#1}\hfill #3}

\genummerd{AA}{6}\par
\genummerd{Lorem ipsum}{12}\par
\genummerd{Amet}{20}\par
\genummerd[-]{Vivamus}{20}
```

AA	6
Lorem ipsum	12
Amet	20
Vivamus -----	20

```
\newcommand\genummerd[3][.]{\par\textbf{#2}\hspace{0.2em}  
\leaders\hbox{#1}\hfill\hbox to 1.55em{\hfil #3}\par}  
  
\genummerd{AA}{6}  
\genummerd{Lorem ipsum}{12}  
\genummerd{Amet}{20}  
\genummerd[-]{Vivamus}{20}  
\genummerd[Hoi!]{Vivamus}{20}
```

AA	6
Lorem ipsum	12
Amet	20
Vivamus -----	20
Vivamus Hoi!Hoi!Hoi!Hoi!Hoi!Hoi!Hoi!Hoi!Hoi!Hoi!Hoi!Hoi!	20

\renewcommand

```
\renewcommand\thesection{007}
\renewcommand\thesubsection{Yo}
\section{AA}
\subsection{BB}
\subsection{CC}
\subsubsection{DD}
```

007 AA

Yo BB

Yo CC

Yo.1 DD

Yo.2 EE

Subscript/superscript: Inzichtsfragen

Wat mist hier? \vec{F}_{tot}

Subscript/superscript: Inzichtsfragen

Wat mist hier? `\vec{F}_{tot}`

Antwoord: de 'tot' wordt niet als tekst gezien: \vec{F}_{tot}

Juiste manier: `\vec{F}_{\text{tot}}`, geeft \vec{F}_{tot}

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Hint: `\vec{abc} = \vec{abc}`

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Juiste manier: \vec{F}_{tot} (`\vec{F}_{\text{tot}}`)

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Wat is het verschil tussen x_0^2 en $\{x_0\}^2$?

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Antwoord: \vec{F}_{tot} (`\vec{F}_{\text{tot}}`)

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Wat is het verschil tussen x_0^2 en $\{x_0\}^2$?

Hint: $x_0^2 = x_0^2$

Antwoord: Superscript is nu van hele groep, niet alleen van x : x_0^2 .

Footnote

```

Lorem ipsum\footnote{Dit tekstje zie je hier
vaak\textellipsis} dolor sit amet. Nunc metus ...
erat.\footnote{\emph{Zeer} interessant.}
Aenean ...

```

Lorem ipsum¹ dolor sit amet. Nunc metus tortor, mat-
 tis et velit vitae, convallis hendrerit erat.² Aenean est
 purus, faucibus nec metus nec, ullamcorper mollis augue.
 Nam ac nibh nec felis semper malesuada. Nullam sit amet
 turpis risus. Nunc iaculis pharetra velit et vulputate.

¹Dit tekstje zie je hier vaak...

²*Zeer* interessant.

Alinea's

```

Lorem ipsum dolor sit amet,
... ornare sit amet.
In ipsum ante, sollicitudin
... sit amet augue.

```

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Integer id erat leo. Suspendisse sit amet ligula turpis. Duis congue turpis odio, non ornare elit ornare sit amet. In ipsum ante, sollicitudin at euismod vitae, tincidunt vitae massa. Aenean metus lectus, porta at tempor at, dapibus sit amet augue.

Alinea's

```

Lorem ipsum dolor sit amet,
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In ipsum ante, sollicitudin
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Lorem ipsum dolor sit amet, consectetur adipiscing elit. Integer id erat leo. Suspendisse sit amet ligula turpis. Duis congue turpis odio, non ornare elit ornare sit amet.

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Alinea's

```
\noindent Lorem ipsum dolor  
sit amet, ... ornare sit  
amet.
```

```
In ipsum ante, sollicitudin  
... sit amet augue.
```

Alinea's

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Lorem ipsum dolor sit amet, consectetur adipiscing elit. Integer id erat leo. Suspendisse sit amet ligula turpis. Duis congue turpis odio, non ornare elit ornare sit amet.

In ipsum ante, sollicitudin at euismod vitae, tincidunt vitae massa. Aenean metus lectus, porta at tempor at, dapibus sit amet augue.

Alinea's

```

Lorem ipsum dolor sit amet,
... ornare sit amet.

```

```
\vspace{1cm}
```

```

In ipsum ante, sollicitudin
... sit amet augue.

```

(Steeds parskip vanaf nu)

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Integer id erat leo. Suspendisse sit amet ligula turpis. Duis congue turpis odio, non ornare elit ornare sit amet.

In ipsum ante, sollicitudin at euismod vitae, tincidunt vitae massa. Aenean metus lectus, porta at tempor at, dapibus sit amet augue.

Alinea's

```

...
\usepackage{parskip}
\begin{document}
Lorem ipsum dolor sit amet,
... ornare sit amet.

In ipsum ante, sollicitudin
... sit amet augue.
\end{document}

```

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Integer id erat leo. Suspendisse sit amet ligula turpis. Duis congue turpis odio, non ornare elit ornare sit amet.

In ipsum ante, sollicitudin at euismod vitae, tincidunt vitae massa. Aenean metus lectus, porta at tempor at, dapibus sit amet augue.

Spaties en overzichtelijke code: de verkeersregels

Nope: `\includegraphics[width=0.9\textwidth]{afbeelding.jpg }`

Ok

```
\includegraphics [
    width=    0.9 \textwidth
]{afbeelding.jpg}
```

Nope

```
\includegraphics [
    width=    0.9 \textwidth

]{afbeelding.jpg}
```

Spaties en overzichtelijke code: de verkeersregels

Ok

```
\usepackage{
  parskip,
  hyperref
}
```

Ok

```
\begin{center}
  AA
\end{center}
\begin{center}
  BB
\end{center}
\begin{center}CC\end{center}
```

Spaties

■ auuuuubuc

a b c.

Spaties

- `aUUUUUbUc` `a b c.`
- `a\U\U\U\UbUc` `a b c.`

Spaties

- `aUUUUUbUc`
- `a\U\U\U\UbUc`
- `a\quad b c\,d\;e`
- `a\hspace{2cm}b`

a b c.

a b c.

a b c d e

a b

Spaties

- | | |
|--|--|
| ▪ <code>aUUUUUbUc</code> | <code>a b c.</code> |
| ▪ <code>a\U\U\U\UbUc</code> | <code>a b c.</code> |
| ▪ <code>a\quad b c\,d\;e</code> | <code>a b c d e</code> |
| ▪ <code>a\hspace{2cm}b</code> | <code>a b</code> |
| ▪ Ik kan <code>\LaTeX</code> schrijven! | Ik kan <code>\LaTeX</code> schrijven! |
| ▪ Vincent is lid van de <code>\TeX</code> niCie. | Vincent is lid van de <code>\TeX</code> niCie. |

Spaties

- `a_b_c`
- `a____b_c`
- `a\quad b\,c\d\;e`
- `a\hspace{2cm}b`
- Ik kan `\LaTeX` schrijven!
- Vincent is lid van de `\TeX` niCie.
- Ik kan `\LaTeX{}` schrijven!

a b c.

a b c.

a b c d e

a b

Ik kan \LaTeX schrijven!

Vincent is lid van de \TeX niCie.

Ik kan \LaTeX schrijven!

Spaties

- `a_b_c`
- `a_____b_c`
- `a\quad b\,c\d\;e`
- `a\hspace{2cm}b`
- Ik kan `\LaTeX` schrijven!
- Vincent is lid van de `\TeX` niCie.
- Ik kan `\LaTeX{}` schrijven!

```
Hallo_b_ik
ben_\textellipsis.
```

```
Hallo_b_ik%
ben_\textellipsis.
```

`a b c.`

`a b c.`

`a b c d e`

`a b`

Ik kan `\LaTeX` schrijven!

Vincent is lid van de `\TeX` niCie.

Ik kan `\LaTeX` schrijven!

Hallo ik ben

Hallo ikben

\setcounter

1	AA
5	BB
5.8	CC
6	DD
6.1	EE

```
\section{AA}
\setcounter{section}{4}
\section{BB}
\setcounter{subsection}{7}
\subsection{CC}
\section{DD}
\subsection{EE}
```

Counter-inspectie

1	AA
Counters:	1.0, 0,
1.1	BB
Counters:	1.1, 1, i
1.2	CC
Counters:	1.2, 2, ii

```

\section{AA}
Counters: \thesubsection,
\arabic{subsection},
\roman{subsection}

\subsection{BB}
Counters: \thesubsection,
\arabic{subsection},
\roman{subsection}

\subsection{CC}
Counters: \thesubsection,
\arabic{subsection},
\roman{subsection}

```

Counter-formattering

1 AA

(1)a BB

(1)b CC

(1)c DD

2 EE

(2)a FF

```
\renewcommand\thesubsection
{(\thesection)\alph{subsection}}

\section{AA}
\subsection{BB}
\subsection{CC}
\subsection{DD}
\section{EE}
\subsection{FF}
```

Counter-formattering

1	AA
(1)a	BB
(1)b	CC
(1)c	DD
2	EE
(2)a	FF

1	AA
1.1	BB
1.2	CC
1.3	DD
2	EE
2.1	FF

Pagina lay-out en dimensies

```
\fancyhead[L]{} \fancyhead[C]{} \fancyhead[R]{}


---


```

1 Lorem ipsum

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Suspendisse tincidunt eleifend enim, ut pharetra mi.

```
\usepackage{geometry}
\usepackage{fancyhdr}

\geometry{
  a6paper,
  %landscape,
  margin=2cm,
  left=1cm,
  right=1cm,
  paperheight=12cm
}

\pagestyle{fancy}
\fancyhead[L]{Linksboven!}
\begin{document}
...
\end{document}
```

```
\fancyfoot[L]{} \fancyfoot[C]{} \fancyfoot[R]{}


---


```

```
\usepackage{geometry}
\usepackage{fancyhdr}

\geometry{
  a6paper,
  landscape,
  margin=2cm,
  left=1cm,
  paperheight=12cm
}

\pagestyle{fancy}
\fancyhead[L]{Linksboven!}
```

twocolumn

Kom bij de T_EXn_iCie!

3 *SETUP AND METHOD*

Nunc feugiat purus lorem, in pulvinar leo accumsan quis. Maecenas tristique sollicitudin venenatis. Phasellus imperdiet urna quis augue ornare condimentum. Cras euismod nisi convallis ipsum ultricies aliquet. Suspendisse accumsan vulputate accumsan. Aliquam vehicula sapien quis egestas venenatis. Nam suscipit imperdiet eros eget finibus. Interdum et malesuada fames ac ante ipsum primis in faucibus. Quisque porta ultricies eros nec po-

tas. Cras a convallis mi, a finibus felis. Nunc quis nisi non magna tincidunt tincidunt. Maecenas cursus, velit non dapibus gravida, quam dui condimentum leo, ac egestas tellus sem a est. Pellentesque convallis sollicitudin commodo. Nulla non viverra sapien.

Etiam sit amet neque rutrum, semper ex et, vehicula diam. Aliquam iaculis dignissim accumsan. Integer vel suscipit ligula, at efficitur nulla. Proin iaculis quam at

```
\documentclass[a4paper,twocolumn]{article}
\usepackage[margin=2.54cm]{geometry}
\usepackage{fancyhdr}
\pagestyle{fancy}
```

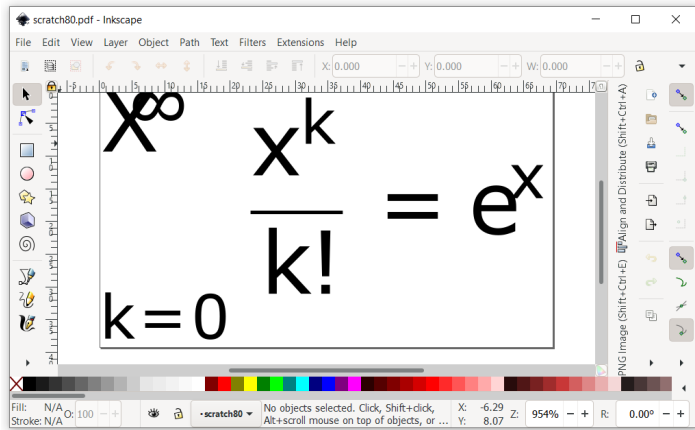

Standalone

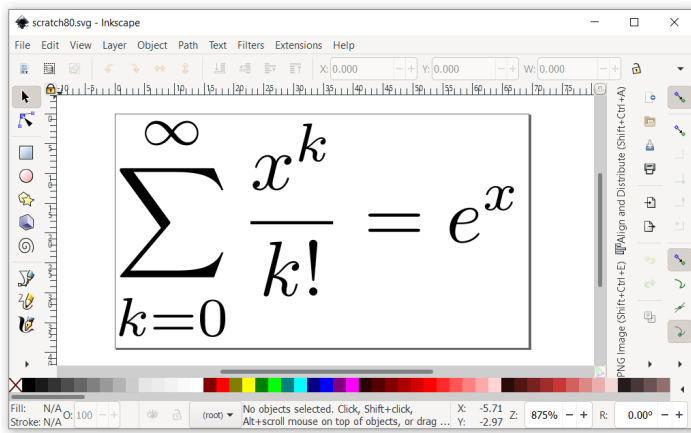
```
% Bestand: prachtigeformule.tex
\documentclass{standalone}
\usepackage{amsmath,amssymb}

\begin{document}
  $\displaystyle\sum_{k=0}^{\infty}
  \frac{x^k}{k!}=e^x$
\end{document}
```

`\includegraphics[...]{prachtigefomule.pdf}`

$$\sum_{k=0}^{\infty} \frac{x^k}{k!} = e^x$$





```

Windows PowerShell
PS D:\Projects\latexscratch\outdir> pdf2svg scratch80.pdf scratch80_alt.svg
PS D:\Projects\latexscratch\outdir> wsl pdftocairo -svg scratch80.pdf scratch80_alt2.svg
PS D:\Projects\latexscratch\outdir> |

```

Converteren van pdf naar svg met `pdf2svg` of met package `pdftocairo`.
 Voor laatste is Linux/Mac nodig of Windows Subsystem for Linux.

```
pdf2svg scratch80.pdf scratch80_alt.svg
wsl pdftocairo -svg scratch80.pdf scratch80_alt2.svg
```

Converteren van pdf naar svg met pdf2svg of met package pdftocairo.
Voor laatste is Linux/Mac nodig of Windows Subsystem for Linux.

4.1.4 1-forms as $C^\infty(M)$ -linear functionals eating vector fields

While covectors of a vector space V take vectors to real numbers, 1-forms take vector given ω as above and $X \in \mathfrak{X}(M)$, evaluating ω_p on X_p for each $p \in M$ we obtain a smc

$$\omega(X) \in \mathcal{C}^\infty(M);$$

(why smooth?). When we vary X it is clear that the resulting map, still denoted by ω ,

$$\omega : \mathfrak{X}(M) \rightarrow \mathcal{C}^\infty(M)$$

is $C^\infty(M)$ -linear, i.e. it is linear and

$$\omega(f \cdot X) = f \cdot \omega(X) \quad \text{for all } f \in \mathcal{C}^\infty(M), X \in \mathfrak{X}(M).$$

4.1.4 1-forms as $C^\infty(M)$ -linear functionals eating vector fields

While covectors of a vector space V take vectors to real numbers, 1-forms take vector fields to functions. Given ω as above and $X \in \mathfrak{X}(M)$, evaluating ω_p on X_p for each $p \in M$ we obtain a smooth function

$$\omega(X) \in C^\infty(M);$$

(why smooth?). When we vary X it is clear that the resulting map, still denoted by ω ,

$$\omega : \mathfrak{X}(M) \rightarrow C^\infty(M)$$

is $C^\infty(M)$ -linear, i.e. it is linear and

$$\omega(f \cdot X) = f \cdot \omega(X) \quad \text{for all } f \in C^\infty(M), X \in \mathfrak{X}(M).$$

$$\sum_{k=0}^{\infty} \frac{x^k}{k!} = e^x$$

$$\sum_{k=0}^{\infty} \frac{x^k}{k!} = e^x$$

Class

```
% Bestand: inleveropgave.cls
\NeedsTeXFormat{LaTeX2e}
\ProvidesClass{inleveropgave}
[2021/10/26 inleveropgave v1.0]

\LoadClass[a4paper]{article}
\RequirePackage{amsmath,amssymb,amsthm}
\RequirePackage[margin=2.54cm]{geometry}
...
```

```
% Bestand: document.tex
\documentclass{inleveropgave}
\begin{document}
    Hey!
\end{document}
```

Boxes

`\phantom`

Aux files

Referenties en meermaalse compilatie

Dimexpr

Conditionals

Accenten

Tikz

csname

xkeyval

etoolbox

show/showthe/the/meaning

def/edef/gdef/xdef/let

catcodes

subfiles

bibliography

environ

LaTeX in pyplot, Mathematica en op websites

hyperref

.fmt files

LaTeX editor shortcuts

In Overleaf
In VS Code
In TeXstudio

listings

beamer

Pdf, svg, png

Το τέλος

Vragen?

Loop je vast? Mail ons op
texnicie@a-eskwadraat.nl