Latex in Examples



Thanks to me

Examples in this book is updated every week.

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```
\label{eq1} $$ \operatorname{equation} \left( eq1 \right) \left( eq1
```

CORRECT paste code from examples

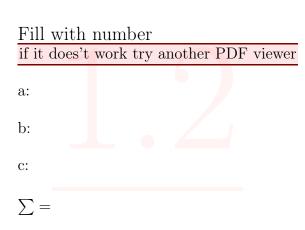
Math Tips

1.1 Auto-resizing equation

$$\dot{\rho} = \frac{x^3}{45a^9 - 23b}$$

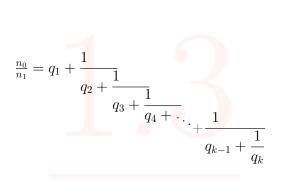
```
\begin{equation*} \label{eq1} $$\operatorname{constant}_{1}^{\theta} \leq .4 \to 0.5... $$ \det{\rho}=\left(x^3\right)_{45a^9-23b}^{\theta} \end{equation*}
```

1.2 Form for simplest calculation



```
documentclass{article}
usepackage{hyperref}
begin{document}
\begin{Form}
\noindent%
Fill with number\\
\text{TextField[name=a]{a:} }
\text{TextField[name=b]{b:} }
TextField[name=c]{c:} \\
\noindent%
\sum = \frac{\text{Num} = \text{Num}}{\text{Iname}}
 event.value = (
    \langle sss\{a\} +
   \backslash sss\{b\} +
   \backslash sss\{c\});
\}, readonly, value=0|{}
\end{Form}
\end{document}
```

1.3 Equation in the form of steps



```
documentclass{article}
 usepackage{amsmath}
 def\mywd{35pt}
\begin{document}
        \label{eq:frac} $$ \prod_0 {n_1} = q_1 + \frac{n_0}{makebox[\mwd][l]} $$
                              \hookrightarrow $1$}}
        {\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mbox[\mb
        {\makebox[\mywd][l]{\q} 3 + \dfrac{\makebox[\mywd][l]}{}}
                               \hookrightarrow $1$}}
        {\mbox[\mbox[\mbox]][l]{$q_4 + }}
              \rightarrow \text{kern30pt\$}
        \{q \{k-1\} + dfrac\{1\}\}
        \{q_k\}$$
\end{document}
```

1.4 One number for multiline equation

$$x_{ij} = d_{ijk}E_k,$$

$$x_{ij} = \varsigma_{ijk}H_k,$$

$$x_{ij} = s_{ijkl}X_{kl},$$

$$x_{ij} = \xi_{ij}\delta p,$$

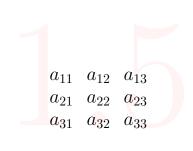
$$x_{ij} = \alpha_{ij}\delta T$$

$$(1.1)$$

```
\documentclass{article}
\usepackage{amsmath}
\begin{document}
\begin{equation}
\begin{aligned}

x_{ij} &= d_{ijk}E_k, \\
x_{ij} &= \varsigma_{ijk}H_k, \\
x_{ij} &= s_{ijkl}X_{kl}, \\
x_{ij} &= \xi_{ij} \delta p, \\
x_{ij} &= \alpha_{ij} \delta T
\end{aligned}
\end{equation}
\end{document}
```

1.5 Matrix in standalone document class



1.6 Multiple lines, one centered label

$$A = \frac{\pi r^2}{2}$$

$$= \frac{1}{2}\pi r^2$$
(1.2)

$$\begin{equation} \label{eq1} \\ begin{split} \\ A \& = \frac{ \pi^2}{2} \\ \& = \frac{1}{2} \pi^2 \\ end{split} \\ end{equation} \\ \end{equation}$$

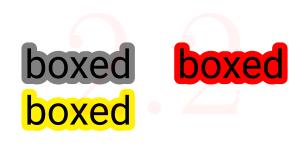
Text, Symbols

2.1 New section symbol



```
\usepackage[object=vectorian]{pgfornament}
\usepackage{lipsum,tikz}
\newcommand{\sectionlinetwo}[2]{\%}
\nointerlineskip \vspace{.5\baselineskip}\hspace{\fill}
{\color{#1}\resizebox{0.5\linewidth}{2ex}
{\{\begin{tikzpicture}}
\node (C) at (0,0) {\};\node (D) at (9,0) {\};
\path (C) to [ornament=#2] (D);
\end{tikzpicture}}\}\%
\hspace{\fill}\par\nointerlineskip
\vspace{.5\baselineskip}}
\%usage---> \sectionlinetwo{orange}{88}
```

2.2 Wireframe rendering



```
\documentclass{article}
\usepackage{xcolor}
\usepackage{roboto}
\usepackage[outline]{contour}
\begin{document}
\roboto\huge\contourlength{.15em}
\contour{gray}{boxed}
\end{document}
```

2.3 Justifyed text

- 1. First item in a list
- 2. Second item in a list
- 3. Third item in a list
- 4. Fourth item in a list
- 5. Fifth item in a list
- 6. Sixth item in a list
- 7. Seventh item in a list
- 8. Eighth item in a list
- 9. Ninth item in a list
- 10. Tenth item in a list

```
\documentclass{article}
\usepackage{blindtext}
\newcommand*\justify{%
\fontdimen2\font=0.4em% interword space
\fontdimen3\font=0.2em% interword stretch
\fontdimen4\font=0.1em% interword shrink
\fontdimen7\font=0.1em% extra space
\hyphenchar\font='\-% allowing hyphenation
}
\begin{document}
\texttt{\justify\blindenumerate[10]}
\end{document}
```

2.4 Text under an underline

This is short text (some text)

```
\documentclass[12pt]{article}
\usepackage{amsmath,soul}
\usepackage{soulpos}
\ulposdef{\ulnumaux}{%

\underset{\saveulnum}{\rule[-.7ex]{\ulwidth}{.4pt}}$}
\newcommand{\ulnum}[2]{%
\def\saveulnum{#1}%
\ulnumaux{#2}}
\begin{document}
\ulnum{\text{(some text)}}{This is short text}
\end{document}
```

Code, listings, minted ...

3.1 Code listing using minted in beamer



```
documentclass{beamer}
usepackage{amsmath}
\usepackage{tcolorbox}
tcbuselibrary{minted,skins,breakable}
newtcblisting{pythoncode}[2][]{
 listing engine=minted, breakable, colback=bg,
 colframe=black!70, listing only,
 minted style=colorful, minted language=python,
 minted options={numbersep=3mm,texcl=true,#1},
 left=5mm,enhanced,
 overlay={\begin{tcbclipinterior}\fill[black!25] (frame.south west)
rectangle ([xshift=5mm]frame.north west);\end{tcbclipinterior}},
\#2,}
\begin{document}
\begin{frame}[fragile]
    \frametitle{Premature Optimization}
    \begin{pythoncode} [linenos=true,] {title=Python Code}
        \hookrightarrow Example}
   import glob
    \end{pythoncode}
\end{frame}
\end{document}
```

3.2 "Zebra" style listing

```
/**

* Prints Hello World.

**/
#include <stdio.h>

int main(void) {
    printf("Hello World!");
    return 0;
}
```

```
\documentclass{article}
  \usepackage[T1]{fontenc}
  \usepackage{beramono}
  \usepackage{listings}
  \usepackage{xcolor}
  \newcommand\realnumberstyle[1]{}
  \makeatletter
  \newcommand{\zebra}[3]{%
                      {\realnumberstyle{#3}}%
                      \begingroup
                     \label{lem:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma
                                        \color{#1}%
                                        \color{#2}%
                                        \label{lem:lap} $$ \Gamma_{\infty}(\st@numbersep)% $$
                                         \verb|\color@block{\linewidth}{\ht\strutbox}{\dp\strutbox}|
                     \endgroup}
  \makeatother
  \begin{document}
 \begin{lstlisting}[language=C,basicstyle=\ttfamily,
numberstyle=\zebra{green!35}{yellow!35},numbers=left]
  * Prints Hello World.
 #include <stdio.h>
int main(void) {
   printf("Hello World!");
                return 0;
 \end{document}
```

3.3 Listing with russian language



```
documentclass{article}
   usepackage[T2A]{fontenc}
   usepackage[utf8]{inputenc}
  \usepackage[russian]{babel}
   usepackage{listings}
  \usepackage{xcolor}
 \begin{document}
 \lstset{ keepspaces=true,
backgroundcolor=\color{blue},
showstringspaces=false,
language=C,
extendedchars=\true,
framexrightmargin=0pt,
framexleftmargin=0pt,
framextopmargin=15pt,
framexbottommargin=15pt,
frame=tb, framerule=0pt,
basicstyle=\color{yellow}\ttfamily\small}
begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{begin{bee}b}}}}}}}}}}
print("English comment"); // English comment
print("Russian comment"); // %here can be russian words
end{lstlisting}\% <<<<<< add "/"
\end{document}
```

3.4 Listing with minted



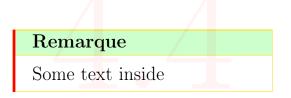
```
\documentclass{article}
\usepackage[many]{tcolorbox}
\tcbuselibrary{minted}
\newtcblisting{mylisting}{
    colframe=cyan,
    colback=cyan!10,
    listing only,
    listing engine=minted,
    minted language=cpp,
    minted options={fontsize=\small,linenos,numbersep=3mm},
}
\begin{document}
    begin{mylisting}
    some code
    \end{mylisting}
\end{document}
```

Tables, boxes and so on

4.1 Nice tcolorbox



4.2 Color box with yellow border



```
documentclass[border=2mm]{standalone}
 usepackage[most]{tcolorbox}
usepackage{lipsum}
\newtcolorbox{mycolorbox}[1]{
   enhanced, breakable,
   title=#1, colback=white,
   colbacktitle=green!20!white,
   coltitle=black,
   fonttitle = \backslash bfseries,
   boxrule=.5pt, arc=0pt,
   outer arc=0pt,
   colframe=yellow!80!orange,
   borderline west={2pt}{0pt}{red}}
begin{document}
begin{mycolorbox}{Remarque}
\lceil \lim_{n \to \infty} [1]
\end{mycolorbox}
end{document}
```

4.3 A drop capital in a toolorbox

Some text. Lorem ipsum dolor sit amet, consectetuer adipiscing elit.

```
\documentclass{article}
\usepackage{lettrine}
\usepackage{tcolorbox}
\usepackage{lipsum}

\begin{document}
\begin{tcolorbox}
\lettrine{S}{ome} text. \lipsum[1]
\end{document}
\end{document}
```

4.4 Table with the desired length.



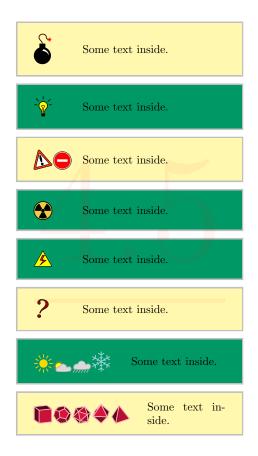
a command was also created to make a new cell view in the table

```
\usepackage{graphicx}
\usepackage{tabularx}
\newcolumntype{Y}{>\centering\arraybackslash}X}
\begin{document}
\begin{table}[h!]
\begin{center}
\caption{\textbf{Caption}}
\begin{tabularx}{14cm}{|Y|Y|c|Y|Y|}
\hline

Variant & res & Veriaty of waters $f_0$, res & C, res & L, res\\hline

5 & 1 & 2 & 1.26 & 5\\
hline
\end{tabularx}
\end{center}
\end{table}
```

4.5 bclogo – Creating colourful boxes with logos



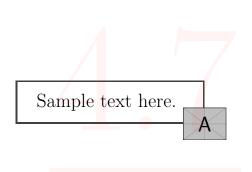
```
documentclass{article}
 usepackage{geometry}
\geometry{
paperwidth=8cm,
paperheight=14cm,
margin=0.5cm
 usepackage{xcolor}
usepackage[most]{tcolorbox}
usepackage[tikz]{bclogo}
 newtcolorbox\{framedd\}[1][]{
 colframe=lightgray,
  colback=yellow!40!white,
 enhanced jigsaw,
 sharp corners,
 lower separated=false,
  lefthand width=1cm,
  sidebyside gap=0.5cm,
  sidebyside,#1}
 begin{document}
 begin{framedd}
  \bcbombe \tcblower Some text inside.
\end{framedd}
\begin{framedd}[colback=blue!40!green]
  \bclampe \tcblower Some text inside.
\end{framedd}
\begin{framedd}
  \bcattention \bcinterdit \tcblower
 Some text inside.
 end{framedd}
 \begin{array}{l} \label{lem:colback=blue!40!green} \ \ \ \ \ \ \ \ \ \ \end{array}
   \bcnucleaire \tcblower
  Some text inside.
\end{framedd}
\begin{framedd}[colback=blue!40!green]
 \bcdanger \tcblower
 Some text inside.
 end\{framedd\}
 begin{framedd}
  \bcquestion \tcblower
  Some text inside.
\end{framedd}
\begin{framedd}[colback=blue!40!green, lefthand width=2.5cm]
  \bcsoleil \bceclaircie \bcpluie \bcneige \tcblower
 Some text inside.
end\{framedd\}
begin{framedd}[lefthand width=3cm]
  \bccube \bcdodecaedre \bcicosaedre \bcoctaedre \bctetraedre \tcblower
 Some text inside.
\end{framedd}
end{document}
```

4.6 Warning banner



```
usepackage[utf8]{inputenc}
     usepackage[T1]{fontenc}
   \usepackage[most]{tcolorbox}
   definecolor{orang}{RGB}{255,155,0}
  \newtcolorbox[auto counter,number within=section]{caja}[1][]{
enhanced jigsaw,colback=white,colframe=orang,coltitle=orang,
fonttitle=\bfseries\sffamily,
sharp corners,
detach title,
leftrule=10mm,
% What you need %%%%%%%%%%%%%%%%
underlay unbroken and first={\node[below,text=black,anchor=east]
at ([xshift=-5.5pt]interior.base west) {\Huge \textbf{!}};},
breakable,pad at break=1mm,
#1,
code = {\left\{ \begin{array}{l} code = {\left[ code = {\left[ \begin{array}{l} code = {\left[ \begin{array}{l} code = {\left[ \begin{array}{l} code = {\left[ \begin{array}{l} code = {\left[ code = {\left[ code = {\left[ \begin{array}{l} code = {\left[ code =
                       \hookrightarrow tcbtitle\par\medskip\}\}\},
 \begin{document}
 \begin{caja}[title=warning]
The vertical alignment settings
 \end{caja}
    end{document}
```

4.7 Photo positioning

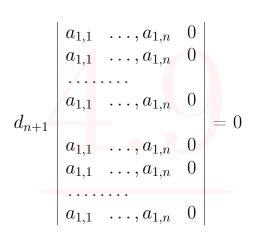


4.8 Absolutely centered cells (vertically and horisontally)

all	in	cells
are 🗸	centered	vertically
and	horisontally	Σ

\documentclass{article}			
\usepackage{float}			
\usepackage{array, makecell}			
\setcellgapes{5pt}			
\begin{document}			
$\begin{array}{c} \begin{array}{c} \\ \\ \end{array} \end{array}$			
\center			
makegapedcells			
$\left\langle \left c c c c c \right \right\rangle$			
\hline			
$1\&1\&1\&1\setminus\setminus$ hline			
$1&1&1&1\setminus\setminus$ hline			
1&1&1&1\\ \hline			
\end{tabular}			
$\ensuremath{\ensuremath{end\{table\}}}$			
$\ensuremath{\operatorname{Nend}} \{ \operatorname{document} \}$			

4.9 Martix made of table



```
documentclass[a4paper,14pt]{extreport}
begin{document}
\begin{table}[]
\begin{array}{c} \begin{array}{c} \\ \\ \end{array} \end{array}
& $a \{1,1\}$ & $\\dots, a \{1,n\}$ & 0 & \\
& a_{1,1} & \cdot dots, a_{1,n} & 0 & \
& $a \{1,1\}$ & $\\dots, a \{1,n\}$ & 0 & \\
d_{n+1} & & & & & = \overline{p} pm 2ad_n$ = 0 \
& $a_{1,1}$ & $\\dots, a_{1,n}$ & 0 & \\
& a_{1,1} & \cdot a_{1,n} & 0 & \
\end{tabular}
\end{table}
\end{document}
```

4.10 Centering cells with NiceTabular



```
documentclass{article}
usepackage[table]{xcolor}
\usepackage{nicematrix}
\NiceMatrixOptions{cell-space-top-limit=5pt,cell-space-bottom-
   \hookrightarrow limit=5pt
begin{document}
\begin{table}[htbp]
centering
\operatorname{begin}\{\operatorname{NiceTabular}\}\{|c|c|c|\}
hline
\cellcolor{red}1\&\cellcolor{green}1\&\ 1\ \ \ \
\cellcolor{green!35}1 \& \cellcolor{blue!45}1 \& 1 \ \ \
end{NiceTabular}
\end{table}
end{document}
```

4.11 Centered cells in longtable

Enum	Example	Description
1	test	Quisque facilisis auctor sapien. Pellentesque gravida hendrerit lectus. Mauris rutrum sodales sapien. Fusce hendrerit sem vel lorem. Integer pellentesque massa vel augue. Integer elit tortor, feugiat quis, sagitis et, ornare non, lacus. Vestibulum posuere pellentesque eros. Quisque venenatis ipsum dictum nulla. Aliquam quis quam non metus eleifend interdum. Nam eget sapien ac mauris malesuada adipiscing. Etiam eleifend neque sed quam. Nulla facilisi. Proin a ligula. Sed id dui eu nibh egestas tincidumt. Suspendisse arcu.
2a	test	Quisque facilisis auctor sapien. Pellentesque gravida hendrerit lectus. Mauris rutrum sodales sapien. Fusce hendrerit sem vel lorem. Integer pellentesque massa vel augue. Integer elit tortor, feugiat quis, sagittis et, ornare non, lacus. Vestibulum posuere pellentesque eros. Quisque venenatis ipsum dictum nulla. Alfquam quis quam non metus eleifend interdum. Nam eget sapien ac mauris malesuada adipiscing. Etiam eleifend neque sed quam. Nulla facilisi. Proin a ligula. Sed id dui eu nibh egestas tincidumt. Suspendisse arcu.
		Quisque facilisis auctor sapien. Pellentesque gravida hendrerit lectus. Mauris rutrum sodales sapien. Fusce hendrerit sem vel lorem. Integer pellentesque massa
2b	test	vel augue. Integer elit tortor, feugiat quis, sagittis et, ornare non, lacus. Vestibulum posuere pellentesque eros. Quisque venenatis ipsum dictum nulla. Aliquam quis quam non metus eleifend interdum. Nam eget sapien ac mauris malesuada adipiscing. Etiam eleifend neque sed quam. Nulla facilisi. Proin a ligula. Sed id dui eu nibh egestas tincidunt. Suspendisse arcu.

\documentclass{article}			
\usepackage[left=1.5cm,right=1.5cm,			
top=1.5cm,bottom=2cm,bindingoffset=0cm]{geometry}			
\usepackage{float}			
\usepackage{array, makecell}			
\usepackage[utf8]{inputenc}			
\usepackage{lipsum}			
\usepackage{booktabs}			
\usepackage{multirow}			
\usepackage{pdflscape}			
\usepackage{longtable, array}			
\begin{document}			
\begin{landscape}			
$\label{longtable} $$\left[0{\rm s}_{15}\right] *{1}{m_{.15}\pi} *{1}{m_{.40}}$			
\hookrightarrow paperwidth}} @{}}			
\endfirsthead			
\endhead			
\toprule			
lem:lem:lem:lem:lem:lem:lem:lem:lem:lem:			
\midrule			
$1 \& \text{test } \& \lceil 50 \rceil \setminus$			
\midrule			
2a & test & \lipsum[50]\\			
2b & test & \lipsum[50]\\			
bottomrule			
\end{longtable}			
\end{landscape}			
$\ensuremath{\operatorname{Nend}} \{ \operatorname{document} \}$			
P			

4.12 If table is not wide enough

	Item1	Item2	Item3
Group	1 0.8	0.1	0.1
Group?	20.1	0.8	0.1
Group:	30.1	-0.1	0.8
Group ²	40.34	0.33	0.33

```
documentclass{article}
usepackage[left=1.5cm,right=1.5cm,
top=1.5cm,bottom=2cm,bindingoffset=0cm]{geometry}
\usepackage{graphicx}
\usepackage{booktabs}
\usepackage{tabularx}
\begin{document}
\begin{table}[!ht]
\caption{Vertical and lateral stresses of mortar.}
vspace{0.5cm}
\left( \frac{tabularx}{tx} \right) 
      & Item1 & Item2 & Item3 \\ \midrule
Group1 & 0.8 & 0.1 & 0.1 \\
Group2 & 0.1 & 0.8 & 0.1 \\
Group3 & 0.1 & 0.1 & 0.8 \\
Group4 & 0.34 & 0.33 & 0.33 \\ \bottomrule
\end{tabularx}
\left| \left| c \right| \right|
\end{table}
\end{document}
```

4.13 Text next to a table

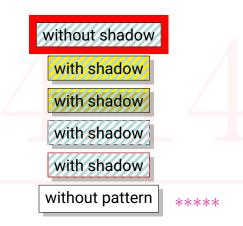


```
documentclass[a4paper,14pt]{extreport}
 usepackage[left=1.5cm,right=1.5cm,top=1.5cm,bottom=2cm,

→ bindingoffset=0cm]{geometry}

\usepackage{lipsum}
\begin{document}
\left[ \frac{minipage}{m} \right] = 0.58 \right]
text text text
end{minipage}
hspace{0.2cm}
\operatorname{begin}\{\min_{m=0.40 \text{ textwidth}}\}
\left( \frac{c|c|c}{c|c|} \right)
\hline
1 & 22 & 333 & \\ \hline
  & & & \setminus \setminus hline
  & & & \\ \hline
 & & & \setminus \setminus hline
\end{tabular}
\end{minipage}
\end{document}
```

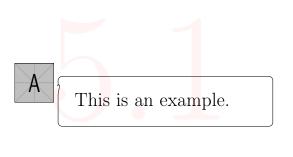
4.14 Text next to a table



```
documentclass[tikz,border=5mm]{standalone}
   usetikzlibrary{chains,patterns,shadows,fit,backgrounds}
 makeatletter
 \tikzset{% customization of pattern
                                 % based on <m.wibrow@gm...> - 2013-03-24 07:20:
                              hatch distance/.store in=\hatchdistance,
                             hatch distance=5pt,
                              hatch thickness/.store in=\hatchthickness,
                              hatch thickness=5pt
\pgfdeclarepatternformonly[\hatchdistance,\hatchthickness]{north east hatch
                   \hookrightarrow \gamma \quad name
               {\left\{\begin{array}{c} pgfqpoint{-1pt}{-1pt}}\% \text{ below left} \right\}}
               {\left\{\begin{array}{c} \left( \right) \\ \left( \right
               {\bf \{\pdfpoint\{\hatchdistance-1pt\}\{\hatchdistance-1pt\}\}\%}
                              \pgfsetcolor{\tikz@pattern@color}
                              \pgfsetlinewidth{\hatchthickness}
                              \protect\operatorname{pgfqpoint}\{0pt\}\{0pt\}\}
                               \pgfusepath{stroke}
makeatother
 \begin{document}
   \begin{tikzpicture}[
             start chain=going below,
              node distance=2mm,
              Node/.style = \{minimum \ width = \#1, \}
                                                                       shape=rectangle,
                                                                       draw, fill=white,
                                                                       on chain},
              Pattern/.style = {pattern=north east hatch,
                                                                           pattern color=teal!30,
                                                                           hatch distance=7pt,
                                                                           hatch thickness=2pt},
              font = \backslash small \backslash sffamily]
              \node[Node=24mm, Pattern,
                                            preaction={fill=white}] (a) {without shadow};
               \begin{scope}[on background layer]
                              \ensuremath{\ensuremath{\mathsf{end}}}
              \node[Node=24mm, drop shadow,
                                             preaction={fill=yellow}, Pattern| (b) {with shadow};
              \node[Node=24mm, preaction={fill=yellow},
                                             drop shadow, Pattern (b) {with shadow};
              \node[Node=24mm, postaction={Pattern},
                                             drop shadow] (b) {with shadow};
              \node[Node=24mm, postaction={draw=red, Pattern},
                                             drop shadow] (b) {with shadow};
              \node[Node=24mm, drop shadow] (c) {without pattern};
  \end{tikzpicture}
 \end{document}
```

Figures

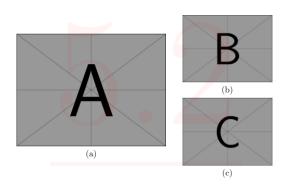
5.1 Comment to figure



```
\documentclass{article}
\usepackage{tikz}
\usetikzlibrary{shapes.callouts}

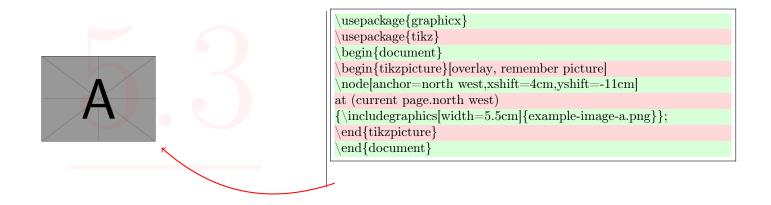
\begin{document}
\begin{tikzpicture}
\node [anchor=south west] at (0, 0) (cartoon) {\includegraphics[width \infty] \infty] \infty] \left( anchor=south west] \text{stwidth} \right\) \( \sim = 15 \text{width}, \text{height} = .15 \text{textwidth} \right\) \( \text{callout,} \text{draw} = \text{black}, \)
\( \text{callout absolute pointer} = (cartoon.east), \)
\( \text{rounded corners} = 3pt, \text{text width} = 0.7 \text{textwidth}, \text{inner sep} = 2ex] \)
\( \text{end} \text{tikzpicture} \)
\( \text{end} \text{tikzpicture} \)
\( \text{end} \text{document} \)
```

5.2 Positioning $1 \mid 2$

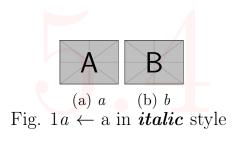


```
documentclass{article}
usepackage{graphicx}
usepackage{subfig}
begin{document}
\operatorname{begin}\{\operatorname{figure}\}[\operatorname{htp}]
centering
begin{tabular}{@{}c@{}}
end{tabular}\qquad % some space
\operatorname{begin}\{\operatorname{tabular}\{@\{\}c@\{\}\}\}
\operatorname{subfloat}\{\operatorname{includegraphics}[\operatorname{width}=0.3]\
\end{tabular}
\caption{Caption.}
end{figure}
end{document}
```

5.3 Placing image anywhere You want



5.4 Italic sabfigure references



```
documentclass{article}
        usepackage{graphicx}
     usepackage{subcaption}
  \renewcommand\thesubfigure\{\itshape\alph\subfigure\}\} \%<--- added
     begin{document}
\begin{figure}
  centering
     begin{subfigure}{.25\textwidth}
  centering
\includegraphics[width=.6\linewidth]{example-image-a}
  \operatorname{caption}\{ \operatorname{textit}\{a\} \}
  label{1a}
     end{subfigure}%
     \begin{array}{c} \begin{array}{c} \\ \\ \end{array} \begin{array}{c} \\ \end{array} \end{array} \begin{array}{c} \\ \end{array} \end{array} \begin{array}{c} \\ \end{array} \end{array} \begin{array}{c} \\ \end{array} \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c} \\ \end{array} \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c} \\ \end{array} \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c} \\ \end{array} \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c} \\ \end{array} \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c} \\ \end{array} \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c} \\ \end{array} \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c} \\ \end{array} \end{array} \begin{array}{c} \\ \end{array} \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c} \\ \end{array} \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c} \\ \end{array} \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c} \\ \end{array} \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c} \\ \end{array} \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c} \\ \end{array} \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c} \\ \end{array} \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c} \\ \end{array} \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c} \\ \end{array} \end{array} \begin{array}{c} \\ \end{array} \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c} \\ \end{array} \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c} \\ \end{array} \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c} \\ \end{array} \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c} \\ \end{array} \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c} \\ \end{array} \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c} \\ \end{array} \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c} \\ \end{array} \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c} \\ \end{array} \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c} \\ \end{array} \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c} \\ \end{array} \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c} \\ \end{array} \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c} \\ \end{array} \end{array} \begin{array}{c} \\ \end{array} \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c} \\ \end{array} \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c} \\ \end{array} \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c} \\
centering
\includegraphics[width=.715\linewidth]{example-image-b}
\operatorname{caption}\{ \operatorname{textit}\{b\} \}
  \langle label\{1b\} \rangle
\end{subfigure}
\caption{ }
\label{fig1}
end{figure}
  Fig. \rf{1a} $\leftarrow$ a in \textbf{\textit{italic}}} style
\end{document}
```

5.5 Wrapfigure







Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language. Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. Heardest geflurn? K giff — not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language. Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some noneaness like "Hundred geflurn?" K giff — not at all! A blind text like this gives you information in Really? Is there no information? Is there a difference between this text and some noneaness like "Hundred geflurn?" K giff — not at all! A blind text like this gives you information about the selected font, how the length of words should match the language. Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get the place of the place o

documentclass[11pt]{scrartcl} usepackage[english]{babel} usepackage[utf8]{inputenc} usepackage{blindtext} usepackage[demo]{graphicx} usepackage{wrapfig} $\operatorname{setlength}\{\operatorname{parindent}\}\{0\mathrm{pt}\}$ begin{document} $\operatorname{begin}\{\operatorname{wrapfigure}\}[11]\{l\}\{0.4\setminus\operatorname{textwidth}\}$ \centering $\include graphics[scale=0.1]{Bild}$ \caption{FIG 1} $end{wrapfigure}$ blindtext $\left[11\right]_{r}{0.4\operatorname{textwidth}}$ \centering \includegraphics[scale=0.1]{Bild} \caption{FIG 2} end{wrapfigure} blindtext $\left[11\right]_{l}\{0.4\right\}$ \centering \includegraphics[scale=0.1]{Bild} \caption{FIG 3} end{wrapfigure} blindtext blindtext \end{document}

Numbering, enumeration, itemizing

6.1 Numbering in few columns

```
documentclass{article}
\text{usepackage{multicol}}

begin{document}
\text{begin{multicols}{2}\%change to have more columns}
\text{begin{enumerate}}
\text{item c}
\text{item g}
\text{item d}
\text{item f}
\text{end{enumerate}}
\text{end{multicols}}
\text{end{document}}
```

6.2 Enumeration environment with position number in the format (i, j)

- (1) First level-one item
 - (1,1) First level-two item
 - (1,2) Second level-two item
- (2) Second level-one item
 - (2,1) Still another level-two item

```
documentclass{article}
\renewcommand{\theenumi}{(\arabic{enumi})}
\renewcommand{\theenumii}{(\arabic{enumi},\arabic{enumii})}\renewcommand{\labelenumi}{\theenumii}}\renewcommand{\labelenumii}{\theenumii}
makeatletter \renewcommand{\p@enumii}{} \makeatother
begin{document}
begin{enumerate}
item First level-one item
  \begin{enumerate}
  \item First level-two item
  \item Second level-two item
  end{enumerate}
\item Second level-one item
  \begin{enumerate}
  \item Still another level-two item
  \end{enumerate}
end{enumerate}
end{document}
```

6.3 Colored enumeration

- **1)** item
- 2)
- 3) item
- 4)
- 5) special item
- 6)
- 7) item

```
documentclass{article}
    usepackage{tikz}
 \displaystyle \left( \operatorname{definecolor} \{\operatorname{amethyst} \} \{\operatorname{rgb} \} \{0.6, 0.4, 0.8\} \right)
  definecolor{applegreen}{rgb}{0.55, 0.71, 0.0}
 \definecolor{arylideyellow}{rgb}{0.91, 0.84, 0.42}
   definecolor{asparagus}{rgb}{0.53, 0.66, 0.42}
  definecolor{atomictangerine}{rgb}{1.0, 0.6, 0.4}
   definecolor{bananayellow}{rgb}{1.0, 0.88, 0.21}
 \definecolor\{brightgreen\}\{rgb\}\{0.4, 1.0, 0.0\}
   definecolor{cambridgeblue}{rgb}{0.64, 0.76, 0.68}
   definecolor{capri}{rgb}{0.0, 0.75, 1.0}
   definecolor{carnationpink}{rgb}{1.0, 0.65, 0.79}
\\ \noindent \n
                      \hookrightarrow cyan,arylideyellow,asparagus,atomictangerine,bananayellow,brightgreen
                    \hookrightarrow ,cambridgeblue,capri}
 \mbox{\newcommand{\SebastianoItem}[1]{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\normalfont{\n
{ \left| ifnum \right| Y = \#1 \mid relax }
 \xdef\SebastianoColor\{X\}
 \tikz[baseline=(SebastianoItem.base),remember
picture
 \node[fill=\SebastianoColor,inner sep=4pt,font=\sffamily,fill opacity=0.5] (
                         \rightarrow SebastianoItem){#1)};}}
 \mbox{\ensuremath{\mbox{newcommand}\{\SebastianoHighlight\}\{\tikz[overlay,remember\ picture]\{\%\}\}} }
 \fill[\SebastianoColor,fill opacity=0.5] ([yshift=4pt,xshift=-\pgflinewidth]
                       \rightarrow SebastianoItem.east) -- ++(4pt,-4pt)
-- ++(-4pt,-4pt) -- cycle;\}
 \begin{document}
  \renewcommand{\labelenumi}{\SebastianoItem{\arabic{enumi}}}
        \begin{enumerate}
                \item item
                \item special item \SebastianoHighlight
                \item item
        \end{enumerate}
   end{document}
```

6.4 Leveled arabic enumeration

- (1) First level-one item
 - (1,1) First level-two item
 - (1,2) Second level-two item
- (2) Second level-one item
 - (2,1) Still another level-two item

```
\documentclass{article}
\renewcommand{\theenumi}{(\arabic{enumi})} \renewcommand{\theenumii}{(\arabic{enumi})} \renewcommand{\labelenumi}{\theenumii} \renewcommand{\labelenumi}{\theenumii} \renewcommand{\labelenumii}{\theenumii}
makeatletter
makeatother
begin{document}
begin{enumerate}
\item First level-one item
  \begin{enumerate}
  \item First level-two item
  \item Second level-two item
  \end{enumerate}
item Second level-one item
  \begin{enumerate}
  \item Still another level-two item
  \end{enumerate}
\end{enumerate}
\end{document}
```

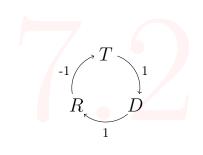
Plots, tikz, pie charts ...

7.1 Simple pie chart



```
\documentclass[border=0.2cm]{standalone}
\usepackage{pgf-pie}
\begin{document}
\begin{tikzpicture}
\pie{22.97/Los Angeles Lakers,}
22.97/Boston Celtics,
8.11/Golden State Warriors,
8.11/Chicago Bulls,
6.76/San Antonio Spurs,
31.07/Other Teams}
\end{tikzpicture}
\end{document}
```

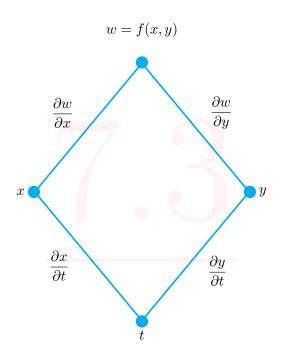
7.2 Circled arrows with text



```
\documentclass{article}
\usepackage{tikz}

\begin{document}
\begin{tikzpicture}[->,scale=.7]
\node (i) at (90:1cm) {$T$};
\node (j) at (-30:1cm) {$D$};
\node (k) at (210:1cm) {$R$};
\draw (70:1cm) arc (70:-10:1cm) node[midway, right] {{\footnotesize 1}};
\draw (-50:1cm) arc (-50:-130:1cm) node[midway, below] {{\footnotesize 1}};
\draw (190:1cm) arc (190:110:1cm) node[midway, left] {{\footnotesize -1}};
\end{tikzpicture}
\end{document}
```

7.3 Diamond with text



```
\documentclass[a4paper,14pt]{extreport}
\label{lem:condition} $$ \usepackage[left=1.5cm,right=1.5cm,top=1.5cm,bottom=2cm,bindingoffset=0] $$

→ cm]{geometry}
\usepackage{amsmath}
usepackage{tikz}
\usetikzlibrary{shapes.geometric}
\begin{document}
\begin{tikzpicture}
\node[diamond,font=\small,
line width=0.4mm,scale=0.7,
   draw = cyan, minimum width = 7.5cm, %text = red,
   minimum height = 9cm] (d) at (0,0) { };
     \node [above=0.5cm] (a) at (d.90) \{w = f(x,y)\};
     \hookrightarrow partial y\$;
     \hookrightarrow partial x}$};
     \node [left=0.1cm] (dd) at (d.180) {$x$};
     \node [right=0.1cm] (e) at (d.0) {$y$};
     \node [below=0.1cm] (f) at (d.270) {$t$};
     \hookrightarrow partial t}$};
     \node [below=0.5cm,left=0.1cm] (h) at (d.220) {\frac{\color{0.5cm},\color{0.5cm}}{\color{0.5cm}}}
          \hookrightarrow partial t\$;
     \node at (d.90) [cyan,circle,fill,inner sep=3pt]{};
     \node at (d.180) [cyan,circle,fill,inner sep=3pt]{};
     \node at (d.0) [cyan,circle,fill,inner sep=3pt]{};
     \node at (d.270) [cyan,circle,fill,inner sep=3pt]{};
\end{tikzpicture}
\end{document}
```

Highlighting

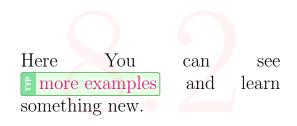
8.1 Words highlighting 1

```
The quick brown fox jumps over the lazy dog.

The quick brown fox jumps over the lazy dog.
```

```
\documentclass{article}
\usepackage{tcolorbox}
\newtcbox{\mybox}[1][red]{on line,
\arc=0pt,outer \arc=0pt,colback=#1!10!\white,colframe=#1!50!\black,
\boxsep=0pt,left=1pt,right=1pt,top=2pt,\bottom=2pt,
\boxrule=0pt,\bottomrule=1pt,toprule=1pt}
\newtcbox{\xmybox}[1][red]{\no line,
\arc=7pt,colback=#1!10!\white,colframe=#1!50!\black,
\before \upper={\rule[-3pt]{0pt}{10pt}},\boxrule=1pt,
\boxsep=0pt,left=6pt,right=6pt,top=2pt,\bottom=2pt}
\begin{\document}
\text{The \mybox[green]{quick} \brown \mybox{fox}...\par
\text{The \xmybox[green]{quick} \brown \xmybox{fox}} ...\end{\document}
```

8.2 Unusual words highlighting



```
\usepackage[many]{tcolorbox}
\newtcbox{\mylib}{enhanced,nobeforeafter, tcbox raise base, boxrule=0.4pt,

\top=0mm, bottom=0mm,
\text{right=0mm, left=4mm, arc=1pt, boxsep=2pt, before upper={\vphantom{dlg}

\top=\}}, colframe=green!50!black, coltext=green!25!black, colback=green

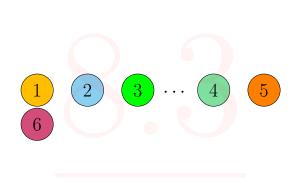
\top:\!10!white, overlay={\begin{tcbclipinterior} \fill[green!75!blue!50!

\top \text{white} (frame.south west) rectangle node[text=white,font=\sffamily\

\top \text{bfseries}\tiny,rotate=90] {TYP} ([xshift=4mm]frame.north west);\

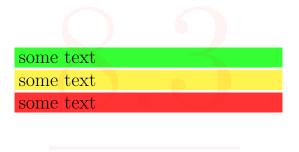
\top \text{end{tcbclipinterior}}}
\text{begin{document}}
\text{mylib{recieve}}
\text{end{document}}
```

8.3 Colored circles



```
usepackage{tikz}
usepackage[framemethod=TikZ]{mdframed}
\usepackage{xcolor}
usetikzlibrary{calc}
makeatletter
\newlength{\mylength}
\xdef\CircleFactor{1.1}
\setlength\mylength{\dimexpr\f@size pt}
\newsavebox{\newbox{\newbox}}
\hookrightarrow WL1/}#1}}\setlength\mylength{\dimexpr\CircleFactor\dimexpr\ht\
    \begin{tabular}{ll} \hookrightarrow & mybox+\dp\mybox\relax\relax}\tikzset\{mystyle/.style=\{circle,\#1,
    → minimum height={\mylength}}} \tikz[baseline=(char.base)]
\node[mystyle] (char) {\#2};
\displaystyle \operatorname{definecolor}\{\operatorname{amber}\}\{\operatorname{rgb}\}\{1.0,\,0.75,\,0.0\}
\definecolor{babyblue}{rgb}{0.54, 0.81, 0.94}
usage --> \circled[fill=amber,draw=black]{1}
```

8.4 Whole line colored



```
\documentclass{article}
\usepackage{xcolor}
\newcommand{\hly}[2]{\colorbox{#1!80}{\parbox{\textwidth}{#2}}}
\begin{document}
%\hly{YOURcolor}{some text}
\hly{green}{some text}
\hly{yellow}{some text}
\hly{red}{some text}
\end{document}
```



Download coffee4.sty and put in the same directory

9.2 Sticky notes



```
documentclass{article}
usepackage{xparse}
\usepackage{fancypar}
\usetikzlibrary{calc,shadows}
\begin{tikzpicture}
\node[
drop shadow={shadow xshift=3pt,},
inner xsep=0pt,
xslant=-0.1, yslant=0.1,
inner ysep=0pt,
text depth = \\ \\ the \\ \\ dimexpr \# 1 + 2.5ex \\ \\ relax
\end{tikzpicture}}
\begin{document}
\StickyNoteP[2.5cm]{\%}
NotebookPar[spiral=false]{
\LARGE first \ \end \} [6.5cm]
\end{document}
```



```
\documentclass{article}
\usepackage{tikz}
\usetikzlibrary{fadings, shadings}
newcommand\fadingtext[3][]{%
\stepcounter{fadcnt}
     \begin{tikzfadingfrompicture}[name=fading letter\thefadcnt]
        \node[text=transparent!0,inner xsep=0pt,outer xsep=0pt,#1] {#3};
     end{tikzfadingfrompicture}%
    \begin{tikzpicture}[baseline=(textnode.base)]
         \label{localization} $$  \  \  = 0pt, \#1](textnode)_{\pi}$ 
         \shade[path fading=fading letter\thefadcnt, #2, fit fading=false]
        (textnode.south west) rectangle (textnode.north east);\%
    \end{tikzpicture}%
\usetikzlibrary{calc}
\newbox\shbox
\tikzset{%
    path picture shading/.style={%
   path picture=\{\%
\pgfpointdiff{\pgfpointanchor{path picture bounding box}{south west}}%
    {\bf \{pf point anchor \{path\ picture\ bounding\ box\}\{north\ east\}\}\%}
\verb|\pgfgetlastxy| pathwidth | pathheight\%|
\pgfinterruptpicture%
       \global\setbox\shbox=\hbox{\pgfuseshading}{\#1}}\%
  \endpgfinterruptpicture%
\protect{\box\shbox}\%
\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\protect\pro
                         color(1.6667bp) = (blue);
                         color(3.3333bp)=(cyan);
                         color(5bp)=(green);
                         color(6.6667bp)=(yellow);
                         color(8.3333bp)=(orange);
                         color(10bp) = (red)
\begin{document}
  \fadingtext[scale=10, font=\bfseries]{upper left=red, upper right=green,
             \hookrightarrow lower left=blue,lower right=yellow}{\LaTeX}
\finterline{10, font=\bfseries]{path picture shading=rainbow}{}}
           \hookrightarrow \text{LaTeX}
\verb|\noindent| fading text[scale=0.7, font=|\bfseries] {path picture shading=}
            \rightarrow rainbow}{\parbox[b]{1.5\linewidth}{\strut\lipsum[1]}}
\end{document}
```

9.4 Single Watermark

```
Lowen is pour dobre at most, connecteror adjusting eff. Ut pursue eff. verification ut, placent as , allyleising vitae, filtin Caralture in protein matrix. Non accural libers, consumery opt, connectering in Vispolaria a, mange. Disar verification ange on a neuron. The contraction of the contractio
```

Nam dei ligda, fringilla a. enimod nedakes, solicitedia vel, veid. Mordá auctor lorem nigi jūžio. Nam legiu likero, pertima abbotirt viria, utičives et. chilia. Danes dapott, tortro sad secuman labrendum; en ligla shipate magas, vite oriuniv odno metar i observativa deli produce deli produc

an meisenada pertituré diam. Bosse' lefe erat, congue son, velériqué at, fincidunt tristique, illevo. Vename vévers feranceurie de la constant de la constan

Quioque illamocoper placerat ipoum. Crus nibb. Morbi vel justo vitae laces tucchimi, ultricos. Lorem ipoum dolor sit amerima connectetures allejacing elli. In lace habitasso platato dictiumst. Integer rempas consulia sirgue. Estam facilitàs. Nune elementum wist. Aeroson placerat. Ut imperdiet, enim sed gravidas solicitudim, felli odio placerat quan, ac pulvima elli purus egot enim. Nune vitae tortor. Point tempers sibi sit ameri sid. Vivums eguis tortor vitae risus porta whicher sinsus porta where itsus porta whicher sinsus porta which resists portate all resists porta

Name vance torte. From temples must is man ben. Weinste quie texti van risse purus vancarus.

Parese manis, Vanchimal metram shall as ketus. Sed kladendum pala facurless samper, les velti mis, ma perinder time competition and perinder time competition. The competition of the com

Superations of fisis. It form forem, introdum on, thirddum of annet, lacket vitae, area. Aensin function pole on ante. Prassont entin elt, ruturum at, molectie ion, nonumum vel, aith. Ut betten enys, undessada vit aunet, fermentium on, sodales curios, magina. Done on purus. Quòque withenia, mas sed utilizios autor, pole divisor gesera del vit elevandi del ert ant sul mila. Done lettus. Cumbilitation est mune. Aliquem dolor ofilo, commodo pertium, utilizios non, plainteria in, volt. Integer area est, nonumumy in, fermentum funcibos egostas vid, odio.

Sel commodo pomuere pode. Mauris ut est. Ut quis purus. Sed ac colo. Sel vehicula heuderit sem. Duis non odlo. Mechi ut de Sed accumant rione sept cello. In heuderit sem. Duis non odlo. Mechi ut de Sed accumant rione sept cello. In heuderitant, Munt felia odlo, sollicitudin sed, vehiquat a, ornare ac, crat. Motté quis dobre. Donce polleutosque, ent ac sagittis semper, ume dui loborti pruns, quis congen perum rattu utilette tella. Podri et quan. Cleas spietar teath incidença di thun tecepren per commis nontra promis nontra promise colle. Podri et que dann. Cleas spietar teath incidença di thun tecepren per commis nontra promise nontra promise collection de la co

Pellencespie habitant modri trittigue senectus et privaç malesmad fames ac turpis egestas. Donce cello clir, dictum in, bunderes si marte, ogestas se, lo. Penesate frequie sapion abpete cilo), hategor vites justica. Abpann vestilandam fragilla lesera. Sed neque hetm. consectuer at, connectivur and, delibrid ag, kvim. Nulli flacihis Pellentespa egel levim. Penin en metus. Sed porttor, in kvim. vite silva, en malesmada ac, dud. Marias table los, fedicilos aga, digilestas quis, silvaries a, dul.

un her late is, manufant are; our "during mate von deinbesoning, suppering ques, murrers is, unit.
Morale hertes, with verrers fanchen perceivan, able or pilegres or dos, are cremando with centine quest question, and the complexes of the contract of the

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confectivate dans semi-sem sem was:
Sed fought, Cum words managen penatibas et magnis dis parturient montes, nascetur ridiculus mus. Ut pellentesque augue sec
urna. Vestibulini diam eros, fringilla et, coissecteture cu, nonummy pi, sapira. Nullam as lectus. In sagitis ultricos manuris. Curabitu
maksanada gria ris armat, massas. Puedo blandt. Rileguam enti volotta, Adiegam entismod. Acenon vel lectus. Nunc imperdide justo no

Eximp cutamod Flace facilità lexim dell. Superalises potenti. In mi erat, cursus id, nommuny sed, ullancoper eget, sujen-Flacescar piertum, magas in delidiq esgales, ped ped ped perim loreus, qui consocietare totre un supen facilità magas. Mantis qui magas wijens mila societisque impecilet. Alfaquam non quam. Alapum portitior quam a lexus. Piussent vid area ut torter cursus voltare, il in vita gabe qui data gli belorium janevare. Flace sed entantum comunità magas. Sed doise arti, esclerique se, chapless nec.

Aliquani jectus. Virsumer leo, Quieșue ornare tellus ullanceopre mulla. Manris portitiro planerta tortor. Sed fringilia justos sei mauris. Mauris fellus. Sed nou loc. Nillam elementum, magna in cursus sodales, aque est evolerișue sapient, venenatie congen mila arcu et pode. Ur suscipit cum yef sapien. Donce congue. Maccenas urna mi, suscipit în, placerat ut, westibulum ut, massa. Fusc ultrices mila et nici.

9.5 Full page of Watermarks

```
Leven jeum tehr såg ært, consectebre skipering elle. Us grun får, vestlichung et, plæeres se, adipienin Nafarfels. Curabitur det grun grejden mants. Nam aren libero, nommengeder consectesfor bl. velputate a, magne. Dange vehicules angue en insper Pellentesope habitant moth tirstique serectus et neturet melseundi fame ac turpie ogstat. Mantra is the Co. Ross verter mêters froncesses ser. Milles el textus vestleichun uran franfigal staties. Beldelse us tellus art gille textus en produce ur tellus art gille verter provise plæerat. Integer pipien es i festale in pretinu quint vivera art, une Personelle per des elle personelle personel
```

```
documentclass[12pt]{book}
  usepackage{graphicx}
  usepackage[pages=some]{background}
  usepackage{lipsum}
  newcommand \backslash DupImage \{\%
                 \includegraphics[width=5cm]{logo.jpeg}\hfill% YOUR IMAGE
                 \label{logo.jpeg} $$\left[ \ensuremath{\operatorname{width}=5cm} \right] = \sum_{i=1}^{n} \left[ \ensuremath{\operatorname{logo.jpeg}} \right] $$\left[ \ensuremath{\operatorname{hfill}} \right] $$ YOUR IMAGE $$
                \label{logo.jpeg} $$ \left[ \frac{\log . jpeg}{hfill\% \ YOUR \ IMAGE \ includegraphics[width=5cm]{logo.jpeg}{hfill\% \ YOUR \ IMAGE \ IMAGE \ YOUR 
                 \label{logo.jpeg} $$\left[ \ensuremath{\operatorname{width}} = 5\ensuremath{\operatorname{cm}} \right] = \ensuremath{\operatorname{logo.jpeg}} \hfill\% \ YOUR \ IMAGE $$\ensuremath{\operatorname{IMAGE}}$
                 \includegraphics[width=5cm]{logo.jpeg}\hfill% YOUR IMAGE
                 newlength{drop}
 backgroundsetup{ scale=1, angle=45, opacity=.3,
     contents={%
                  \left\{ \min\left\{ \min\right\} \right\} 
                  DupImage \setminus [2ex]
                  \DupImage\\
                 \DupImage\\
                                                               [2ex]
                 \DupImage\\[2ex]
                  \square DupImage \setminus [2ex]
                  DupImage\\[2ex
                  DupImage \setminus [2ex]
                 \square 
                  \square DupImage \setminus [2ex]
                \square \left( \operatorname{DupImage} \right) 
begin{document}
 drop=0.1 \times BgThispage \times [1-8]
\end{document}
```