
TEMPLATE TITLE

Subtitle

Author
Who?
Where?
When?

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1 Theorem

Definition 1.1 (Definition 1). *Your definition here...*

Definition 1.2 (Definition 2). *Your definition here...*

Definitions are numbered independently from other environments.

Theorem 1.1 (A Theorem). *Your theorem here...*

Lemma 1.2 (A Lemma). *Your lemma here...*

Corollary 1.3 (A Corollary). *Your corollary here...*

Proposition 1.4 (A Proposition). *Your proposition here...*

Remark 1.1 (A Remark). Your remark here...

Remarks also have their own numbering.

$$\sin(\alpha + \beta) = \sin \alpha \cos \beta + \cos \alpha \sin \beta. \quad (1.1)$$

Equation numbers follow the section number.

2 Exercise, Question and Example

The question, exercise, and example environment are displayed in a blue box:

Question 2.1 (☆☆☆ — A question). Your question here...

Example 2.1 (☆☆☆ — An example). Your example.....

⚙ Experiment:

📌 Takeaway:

💡 Intuition:

Exercise 2.1 (🔗☆☆☆ — An Exercise). Your exercise.....

3 Box

Four Markdown-style boxes can be used directly:

This is a red box.

This is a green box.

This is a gray box.

This is a blue box.

But you'd better not use them directly to avoid confusion since other environments have used these boxes, try to define your own box (see below).

If you don't like the colors, you can define your own:

```
1 \definecolor{mypink}{rgb}{1,0.965,0.965}
2 \definecolor{blue2}{RGB}{0,47,167}
```

Then update the color in the following code:

```
1 \newtcolorbox{bluebox}{
2   colback=myblue!3,      % Background color of the box
3   colframe=myblue,       % Border color of the box
4   leftrule=4pt,          % Thickness of the left border
5   toprule=0pt,           % No top border
6   bottomrule=0pt,        % No bottom border
7   rightrule=0pt,         % No right border
8   arc=1.2mm,             % Rounded corners
9   outer arc=1.5mm,       % Outer border radius
10 }
```

The same applies to other boxes, and you can define your own in the same way.

4 Figures and Tables

Avoid using floating environments (figures and tables) inside the boxes. To include them, use this structure:

```
1 \begin{center}
2   \includegraphics[width=0.8\textwidth]{image.jpeg}
3   \captionof{figure}{A figure}
4 \end{center}
```

```
1 \begin{center}
2   \begin{tabular}{ccc}
3     \hline
4     a & b & c \\
5     \hline
6     a & b & c \\
7     \hline
8   \end{tabular}
9   \captionof{table}{A table}
10 \end{center}
```

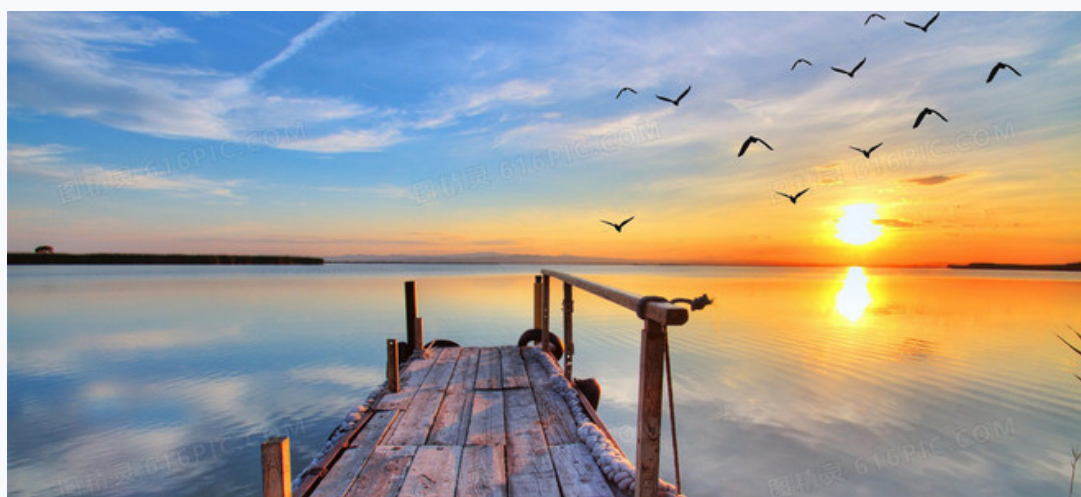


Figure 1: A figure

a	b	c
a	b	c

Table 1: A table

5 Code

We defined a code environment for the R language:

```
1 > a+1
2 # [1] 2
```

If you use another language, modify the following code:

```
1 \lstnewenvironment{R}{\lstset{
2   language=R,
3   basicstyle=\footnotesize\ttfamily,
4   numbers=left,
5   numberstyle=\tiny\color{black},
6   stepnumber=1,
7   numbersep=5pt,
8   backgroundcolor=\color{mygray},
9   showspaces=false,
10  showstringspaces=false,
11  showtabs=false,
12  frame=single,
13  rulecolor=\color{black},
14  tabsize=4,
15  captionpos=b,
16  breaklines=true,
17  breakatwhitespace=false,
18  keywordstyle=\ttfamily\bfseries\color{myblue},
19  commentstyle=\ttfamily\bfseries\color{myred},
20  stringstyle=\ttfamily\bfseries\color{mygreen}
21 }}{}
```

The `tex` environment was defined just for writing this tutorial. You can remove it if it's unnecessary.

6 Macros

This template includes the macros shown in Tables 2 and 3.

Macro	Symbol	Macro	Symbol
<code>\C</code>	\mathbb{C}	<code>\ninfo{a}</code>	$(-\infty, a)$
<code>\Q</code>	\mathbb{Q}	<code>\ninfo{a}</code>	$(-\infty, a]$
<code>\Z</code>	\mathbb{Z}	<code>\pinfo{a}</code>	$(a, +\infty)$
<code>\Rn{k}</code>	\mathbb{R}^k	<code>\pinfo{a}</code>	$[a, +\infty)$
<code>\borel</code>	\mathcal{B}	<code>\pa{a,b,c}</code>	(a, b, c)
<code>\familay</code>	\mathcal{F}	<code>\br{a,b,c}</code>	$[a, b, c]$
<code>\oc{a,b}</code>	$(a, b]$	<code>\cbr{a,b,c}</code>	$\{a, b, c\}$
<code>\co{a,b}</code>	$[a, b)$	<code>\inner{a,b}</code>	$\langle a, b \rangle$
<code>\norm{a}</code>	$\ a\ $	<code>\abs{a}</code>	$ a $
<code>\floor{a}</code>	$\lfloor a \rfloor$	<code>\ceil{a}</code>	$\lceil a \rceil$
<code>\dd</code>	d	<code>\dv{f}{x}{2}</code>	$\frac{d^2 f}{dx^2}$
<code>\p</code>	∂	<code>\pdv{f}{x}{2}</code>	$\frac{\partial^2 f}{\partial x^2}$
<code>\pr</code>	P	<code>\Cov</code>	Cov
<code>\E</code>	E	<code>\Corr</code>	Corr
<code>\I{x>1}</code>	$\mathbf{1}_{\{x>1\}}$	<code>\inD</code>	\xrightarrow{d}
<code>\inAS</code>	$\xrightarrow{\text{a.s.}}$	<code>\inP</code>	$\xrightarrow{\text{pr}}$
<code>\inLp</code>	$\xrightarrow{\mathcal{L}^p}$	<code>\inMSE</code>	$\xrightarrow{\text{qm}}$
<code>\simIND</code>	$\stackrel{\text{IID}}{\sim}$	<code>\indep</code>	\perp
<code>\IID</code>	IID	<code>\simIID</code>	$\stackrel{\text{IID}}{\sim}$
<code>\mat{a&b\\c&d}</code>	$\begin{matrix} a & b \\ c & d \end{matrix}$	<code>\smat{a&b\\c&d}</code>	$\begin{matrix} a & b \\ c & d \end{matrix}$
<code>\bmat{a&b\\c&d}</code>	$\begin{bmatrix} a & b \\ c & d \end{bmatrix}$	<code>\bsmat{a&b\\c&d}</code>	$\begin{bmatrix} a & b \\ c & d \end{bmatrix}$
<code>\pmat{a&b\\c&d}</code>	$\begin{pmatrix} a & b \\ c & d \end{pmatrix}$	<code>\psmat{a&b\\c&d}</code>	$\begin{pmatrix} a & b \\ c & d \end{pmatrix}$
<code>\argmin</code>	$\arg \min$	<code>\argmax</code>	$\arg \max$

Table 2: Macros and Corresponding Symbols for Math Operator

Macro	Symbol	Macro	Symbol
<code>\median</code>	median	<code>\Var</code>	Var
<code>\SD</code>	SD	<code>\CV</code>	CV
<code>\Bias</code>	Bias	<code>\AMSE</code>	AMSE
<code>\MSE</code>	MSE	<code>\ARE</code>	ARE
<code>\AV</code>	AV	<code>\CRLB</code>	CRLB
<code>\TN</code>	TN	<code>\Bern</code>	Bern
<code>\Unif</code>	Unif	<code>\Normal</code>	N
<code>\logNormal</code>	LN	<code>\Bin</code>	Bin
<code>\NB</code>	NB	<code>\HG</code>	HG
<code>\Geom</code>	Geom	<code>\Beta</code>	Beta
<code>\BetaBin</code>	Beta-Bin	<code>\Ga</code>	Ga
<code>\Exp</code>	Exp	<code>\Expo</code>	Expo
<code>\Po</code>	Po	<code>\Multi</code>	Multi
<code>\student</code>	t	<code>\Cauchy</code>	Cauchy
<code>\Pareto</code>	Pareto	<code>\RV</code>	RV
<code>\Laplace</code>	Laplace	<code>\cdf</code>	CDF
<code>\Logistic</code>	Logistic	<code>\cgf</code>	CGF
<code>\Dir</code>	Dir	<code>\pdf</code>	PDF
<code>\DP</code>	DP	<code>\pmf</code>	PMF
<code>\Inv</code>	Inv-	<code>\chf</code>	CHF
<code>\F</code>	F	<code>\mgf</code>	MGF
<code>\EF</code>	EF	<code>\MLE</code>	MLE
<code>\NEF</code>	NEF	<code>\MAP</code>	MAP
<code>\Med</code>	MED	<code>\MME</code>	MME
<code>\EB</code>	EB	<code>\QME</code>	QME
<code>\UMVUE</code>	UMVUE	<code>\MPT</code>	MPT
<code>\UMPT</code>	UMPT	<code>\LRT</code>	LRT
<code>\mis</code>	MIS	<code>\obs</code>	OBS
<code>\com</code>	COM	<code>\MCMC</code>	MCMC
<code>\burn</code>	burn	<code>\thin</code>	thin
<code>\ESS</code>	ESS		

Table 3: Macros and Corresponding Symbols for Statistical Notation