Latex How To

dadadadawjb

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Latex How To*

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SJTU   JSZX

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Title of Table of Contents

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‡Student of JSZX class of WanLi

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*This is the footnote in the title.

List of Figures

List of Tables

List of myfloat

List of mynewfloat

<div align="center">

Sec　1. — Fonts

</div>

✳*1.1:　Special Characters*

Accents (重音): ò, ó, ô, ö, õ, ō, ȯ, ŏ, ǒ, ő, o͡o, o̊, ǫ, ọ, o̲

Variants: Å, å, Æ, æ, Œ, œ, ß, ß, IJ, ij, Ł, ł, Ø, ø, ı, ȷ

Symbols: §, †, ‡, ¶, ©, £, ®, ™, •

Ligature (连字): shelfful, shelfful, shelfful

†*1.2:　Punctuation*

1.2.1 *Quote*

'hello' "world" "dadadadawjb"
It's wjb's howto.

1.2.2 *Minus*

Hyphen (连字符): X-ray
Number ranges (en dash): 1–2. Also can use ∼.
Punctuation dash (em dash) (破折号): I am dadadadawjb—a student.

1.2.3 *Ellipsis*

In the last….
In the middle . . . middle.

1.2.4 *Indirect Punctuations*

#, $, %, &, {, }, _, \

♯*1.3:　Digits*

Often used with symbol to use character code, such as Z, Z, Z, Z

§*1.4:　Fonts Type*

1.4.1 *Font Family*

Roman font family. Roman font family.
Sans serif font family. Sans serif font family.
`Typewriter font family. Typewriter font family.`
黑体 黑体
宋体 宋体
仿宋 仿宋
楷书 楷书
Lucida Sans font family.
楷体

1.4.2 Font Shape

Upright font shape. Upright font shape.
Italic font shape. Italic font shape.
Slanted font shape. Slanted font shape.
SMALL CAPITALS FONT SHAPE. SMALL CAPITALS FONT SHAPE.
Italic correction:
*M*M *M*M *M*M *M*

1.4.3 Font Series

Medium font series. Medium font series.
Bold extended font series. Bold extended font series.

1.4.4 Uniform Set The Three

Normal font type. Normal font type.

1.4.5 Emphasize

This is *emphasized* text.
This is *emphasized* text.
This is **more emphasized** text.
Underline emphasize is not <u>uniform</u> and cannot newline.
<u>Uline emphasize</u> is <u>uniform</u> and can newline.
<u>double uline</u> wave uline ~~cross line~~ ~~wrong line~~ dash uline dot uline
<u>下划线</u> <u>双下划线</u> 下波浪线 ~~删除线~~ ~~错误线~~ 下加点

1.4.6 Font Size

tiny script size footnote size small normal size

large larger even larger huge largest

初号 小初号

一号 小一号 二号 小二号

三号 小三号 四号 小四号 五号 小五号 六号 小六号 七号 八号

Sec 2. — Blank

∗2.1: Blank After Command

Happy TeXing. Happy TeX ing. Happy TeX ing. Happy TeX ing.

†2.2: Blank With Newline

Ties (带子):
Question 1
Donald E. Knuth
Mr. Wang
function $f(x)$
1, 2, and 3
Other cannot newline blank:
[ ] or [ ]: 0.1667em
[]: -0.1667em
[ ]: 0.5em
[ ] or [ ]: 1 blank
Other can newline blank:
[   ]: 1em
[   ]: 2em
[ ]: 0.5em
[ ]: 1 blank
[   ]
     compulsion

left	middle	right
left	middle	right
left	2/3	right
left————————middle................................right

‡2.3: Blank After Dot

Hello, world. Hi. (Dot after lowercase by default end)
U.S.A. is abbreviation. (Dot after uppercase by default abbreviation)
Lu et al. is great. (lowercase abbreviation)
Roman number XII. Yes. (uppercase end)

§2.4: Blank With Languages

中文与 English 之间会被自动加上空格
取消中英文间隔Hello

¶2.5: Phantom

Phantom (幻影):
Hello   , dadadadawjb!

Hello   , dadadadawjb!
Hello , dadadadawjb!

□2.6:   Newline

This is a line.
This is a line.

This is a line.   This is a line.
This is a line.

∗∗2.7:   Vertical Blank

[]

[]
[]
[]

compulsion

††2.8:   Newpage

This is in one page.
This is maybe also in this page.

This is in the other page.

<div align="center">

Sec   3. ─ Box

</div>

∗3.1:   Horizontal Box

Horizon contents, cannot be broken.

Stretched   contents

overlapword

overlap, word overlap

Framed box.

Stretched contents

tight framebox

loose framebox

thin framebox

thick framebox

My   box   contents

†3.2:   Vertical Box

This is a | vertical box |.

This is a vertical box.

natrual width

‡3.3:   Rule Box

Middle

Left——————Right

QED ■

§3.4:   Strut

(支架)

¶3.5:   Raise Box

TEX

□3.6:   Geometry Box

TwoScale
Reflect

Resize Resize Resize

Rotate Rotate

Sec 4. — Paragraph

∗*4.1: Indent*

This is a paragraph with no indent.

This is a paragraph with indent.

Here is a new paragraph.

Here is a new paragraph.

For the left of the paragraph, indent 5px applied in the first 2 lines of the paragraph, which is called "Hanging indentation".

†*4.2: Segment Spacing*

A new paragraph.

‡*4.3: Alignment*

Left alignment.

Right alignment.

Center alignment.

Left alignment environment.

Right alignment environment.

Center alignment environment.

§*4.4: Hyphenation*

manuscript set the hyphen
allow wider blank in paragraph so that forbid hyphenation.
do not allow wide blank in paragraph so that recover default strict hyphenation.
environment for allowing wider blank in paragraph so that forbid hyphenation.

¶*4.5: Ragged2e*

Left alignment with ragged2e.

Right alignment with ragged2e.

Center alignment with ragged2e.

Return back to uniform two-end alignment with ragged2e.

Left alignment environment with ragged2e.

Right alignment environment with ragged2e.

Center alignment environment with ragged2e.

Uniform two-end alignment environment with ragged2e.

□*4.6: Lettrine*

Tʜᴇ lettrine can be used for first word sanking.

∗∗*4.7: Shapepar*

<div align="center">

绿 草 苍　　　　苍， 白
雾 茫 茫， 有 位　　佳 人， 在 水 一
方。绿草萋萋，白雾迷离，有位佳人，
靠水而居。我愿逆流而上，依偎在她身
旁。无奈前有险滩，道路又远又长。我
愿顺流而下，找寻她的方向。却见依
稀仿佛，她在水的中央。我愿逆流而
上，与她轻言细语。无奈前有险
滩，道路曲折无已。我愿顺流
而下，找寻她的足迹。却
见仿佛依稀，她在
水中伫立。

♡

</div>

Sec 5. — Word Environment

∗5.1: Quotation

Small segment quotation, with no indent.

   Several segments quotation, with indent.

†5.2: Poetry

In one segment, use double-back-slash to newline
Between segments, use blank line to newsegment

‡5.3: Abstract

Name for abstract

This is the abstract.

<div align="center">

Sec 6. — List

</div>

∗6.1: Ordered List

1. The first item.

2. The second item.

3. The third item, its index is 3, its value is 3 by default; its tag is 3., its value is 3. by default.

5. The fourth item, commands are 3, , , ; 3., (), ., ..

4. The fifth item, forms are 4, d, iv, D, IV, d, §, 四.

†6.2: Unordered List

• The first item.

• The second item.

† The third item, tags are •, –, ∗, ·, values are •, –, ∗, · by default.

‡6.3: Tag List

First The first item.

Second The second item.

Third The third item.

• *Hello* WJB.

• *World* wjb.

§6.4: General List

#6-1 Hello.

#6-2 World.

  • Hello.
  • World.

¶6.5: Trivial List

<div align="center">

It is the same as center environment.

</div>

□6.6: Enumitem

(1) Hello.
(2) World.

Sec   7. — Theorem

TheoremTitle 7.1 (Moore's Law) The number of transistors in a dense integrated circuit (IC) doubles about every two years.

Sec 8. — Verbatim

```
\LaTeX␣\␣&␣\TeX
```

```
$name␣=␣wjb
print("Hello,␣$name!\n")
```

```
#$%^&{}
```
```
#^&{}
```
```
#$%^&{}
```
```
            #$%^&{}
            #$%^&{}
            #$%^&{}
```

```
$name = wjb
print("Hello, $name!\n")
```

Sec 9. — Codes

```
1  /* hello.c */
2  # include <stdio.h>
3  int main() {
4      double x = 1 / sin(x); // 1/sin x
5      printf("Hello, world!\n");
6  }
```

Inline codes: **typedef char** byte

<div align="center">

Sec   10. — Tabular

</div>

∗10.1: Tabbing

Form	Author
Plain TₑX	Donald Ervin Knuth
LᴬTₑX	Leslie Lamport

†10.2: Tabular And Array

10.2.1 Overview

left	center	right	fixed width	
raggedright	centering	raggedleft	This can automatically line break if it is longer than the fixed width	Ragged bottom.

Almost the same as tabular, not repeat.

$$\begin{array}{c|cc} \frac{1}{2} & 1 & 0 \\ 0 & 1 & -\frac{1}{2} \end{array}$$

input	12345.6	5000.0	1020.55
output	765.43	5120.5	98760.0
net	11580.17	-120.5	-97739.45

name	wjb	dadadadawjb	Wang Junbo
input	12345.6	5000	1020.55
output	765.43	5120.5	98760
net	11580.17	-120.5	-97739.45

```
           Hello
The left          The right
           World
```

1	2	3	4

up
mid
down

Ragged top

up
mid
down

Ragged top

10.2.2 *Item Merge And Split*

Used for the horizontal merge:

grades	
OS	CA
95	100

Used for changing the ragging:

input	output
1	1
2	4
3	9

Used for the vertical merge:

	grades	
name	OS	CA
wjb	95	100

name	grades	
	OS	CA
wjb	95	100

Used for the horizontal split:

1		
1	2	
1	2	3

1		
1	2	
1	2	3

Make item cell:

input data	output data
12345	56789

input data	output data
12345	56789

name	math grade
wjb	100

multiple grades	100
	99
	98

value \ column		c1	c2	c3
row				
r1		1	0	0
r2		0	1	0
r3		0	0	1

Diagnal split:

10.2.3 **Width**

number	1	2	3	4	5
character	A	B	C	D	E

number	1	2	3	4	5
character	A	B	C	D	E

number	1	2	3	4	5
character	A	B	C	D	E

We can not deal with the too wide tabular.

10.2.4 **Length**

TABLENAME 1) – **The Example Of Longtable**

name	description
a	the fist character in alphabet
b	the second character in alphabet
c	the third character in alphabet
d	the fourth character in alphabet
e	the fifth character in alphabet

Continuing next page…

(Continued)

f	the sixth character in alphabet
g	the seventh character in alphabet
h	the eighth character in alphabet
i	the ninth character in alphabet
j	the tenth character in alphabet
k	the eleventh character in alphabet
l	the twelfth character in alphabet
m	the thirdth character in alphabet
n	the fourteenth character in alphabet
o	the fifteenth character in alphabet
p	the sixteenth character in alphabet
q	the seventeenth character in alphabet
r	the eighteenth character in alphabet
s	the nineteenth character in alphabet
t	the twentieth character in alphabet
u	the twenty first character in alphabet
v	the twenty second character in alphabet
w	the twenty third character in alphabet
x	the twenty fourth character in alphabet
y	the twenty fifth character in alphabet
z	the twenty sixth character in alphabet

End Of Table

<div align="center">

TᴀʙʟᴇNᴀᴍᴇ 2) – **The Example Of LTXTable**

</div>

Name	Description
A	The fist character in alphabet
B	The second character in alphabet
C	The third character in alphabet
D	The fourth character in alphabet
E	The fifth character in alphabet
F	The sixth character in alphabet
G	The seventh character in alphabet
H	The eighth character in alphabet
I	The ninth character in alphabet
J	The tenth character in alphabet
K	The eleventh character in alphabet
L	The twelfth character in alphabet
M	The thirdth character in alphabet
N	The fourteenth character in alphabet
O	The fifteenth character in alphabet
P	The sixteenth character in alphabet
Q	The seventeenth character in alphabet
R	The eighteenth character in alphabet
S	The nineteenth character in alphabet
T	The twentieth character in alphabet

<div align="center">

Continuing next page…

</div>

(Continued)

U	The twenty first character in alphabet
V	The twenty second character in alphabet
W	The twenty third character in alphabet
X	The twenty fourth character in alphabet
Y	The twenty fifth character in alphabet
Z	The twenty sixth character in alphabet

End Of Table

TableName 3) – **The Example Of LTXTable
With Fancyvrb**

Name	Description
A	The 1st character in alphabet
B	The 2nd character in alphabet
C	The 3rd character in alphabet
D	The 4th character in alphabet
E	The 5th character in alphabet
F	The 6th character in alphabet
G	The 7th character in alphabet
H	The 8th character in alphabet
I	The 9th character in alphabet
J	The 10th character in alphabet
K	The 11th character in alphabet

Continuing next page…

(Continued)

L	The 12th character in alphabet
M	The 13th character in alphabet
N	The 14th character in alphabet
O	The 15th character in alphabet
P	The 16th character in alphabet
Q	The 17th character in alphabet
R	The 18th character in alphabet
S	The 19th character in alphabet
T	The 20th character in alphabet
U	The 21st character in alphabet
V	The 22nd character in alphabet
W	The 23rd character in alphabet
X	The 24th character in alphabet
Y	The 25th character in alphabet
Z	The 26th character in alphabet

End Of Table

TABLENAME 4) – **The Example Of Longtabu**

Name	Description
a	The 1st character in alphabet
b	The 2nd character in alphabet

Continuing next page…

(Continued)

c	The 3rd character in alphabet
d	The 4th character in alphabet
e	The 5th character in alphabet
f	The 6th character in alphabet
g	The 7th character in alphabet
h	The 8th character in alphabet
i	The 9th character in alphabet
j	The 10th character in alphabet
k	The 11th character in alphabet
l	The 12th character in alphabet
m	The 13th character in alphabet
n	The 14th character in alphabet
o	The 15th character in alphabet
p	The 16th character in alphabet
q	The 17th character in alphabet
r	The 18th character in alphabet
s	The 19th character in alphabet
t	The 20th character in alphabet
u	The 21st character in alphabet
v	The 22nd character in alphabet
w	The 23rd character in alphabet

Continuing next page…

(Continued)

x	The 24th character in alphabet
y	The 25th character in alphabet
z	The 26th character in alphabet

End Of Table

TᴀʙʟᴇNᴀᴍᴇ 5) – **The Example Of Xtab**

name	description
a	The 1st character in alphabet
b	The 2nd character in alphabet
c	The 3rd character in alphabet
d	The 4th character in alphabet
e	The 5th character in alphabet
f	The 6th character in alphabet
g	The 7th character in alphabet
h	The 8th character in alphabet
i	The 9th character in alphabet

Continuing next page…

(Continued)

j	The 10th character in alphabet
k	The 11th character in alphabet
l	The 12th character in alphabet
m	The 13th character in alphabet
n	The 14th character in alphabet
o	The 15th character in alphabet
p	The 16th character in alphabet
q	The 17th character in alphabet
r	The 18th character in alphabet
s	The 19th character in alphabet
t	The 20th character in alphabet
u	The 21st character in alphabet
v	The 22nd character in alphabet
w	The 23rd character in alphabet
x	The 24th character in alphabet
y	The 25th character in alphabet

Continuing next page…

(Continued)

z	The 26th character in alphabet

End Of Table

10.2.5 **Thickness**

Name	CS		SE		All
	OS	CA	SEP	CSE	
wjb	100	100	100	100	A+
dadadadawjb	99	99	99	99	A+
Wang Junbo	98	98	98	98	A+

input	output	
x	y	z
1	1	1
2	4	8

input	output	
x	y	z
1	1	1
2	4	8

10.2.6 *Double Lines*

input	output	
x	y	z
1	1	1
2	4	8

Should omit double lines in tabular

x	y	z
1	1	1
2	4	8

10.2.7 *Dash Line*

‡10.3: *Float Table*

10.3.1 *Overview*

TABLENAME 6) – **Tabular In Table -
Example Of Float Table**
表名 6) – 浮动表格的例子

left	center	right
item1	item2	item3

10.3.2 *Rotated Table*

10.3.3 *Side By Side*

Table With Words

TABLENAME 7) – **Table With Words Example**

left	center	right
item1	item2	item3

This is the comment on the table.

Left	LEFT	left	Middle	MIDDLE	middle	Right	RIGHT	right
-4	-3	-2	-1	0	1	2	3	4

Tables Side By Side

Table Name 8) – **Table Side By Side Example**

left	center	right
item1	item2	item3

left	center	right
item1	item2	item3

Captions For Side By Side

Table Name 9) – **Title For Both**

Table Name 10) – **Title For Left**

Table Name 11) – **Title For Right**

left	center	right
item1	item2	item3

left	center	right
item1	item2	item3

Table Name 12) – **Title For Both**

left	center	right
item1	item2	item3

left	center	right
item1	item2	item3

A: Title For Left

B: Title For Right

10.3.4 *Table Arrounded By Words*

These are the words around the table, and the table will appear below two lines, lying in the right of the words, rather than left. The following will be fillings. Hello world. Hello world. Hello world.

left	center	right
item1	item2	item3

Table Name 13) – **Title Of Arounded Table**

Hello world. Hello world.

Hello world. Hello world.

These are the words around the table, and the table will appear with height of 10 lines, lying in the right of the words, rather than left, and it will extend out 1.5cm, and has width of 5cm. The following will be fillings. Hello world.

TᴀʙʟᴇNᴀᴍᴇ 14) – **Title Of Arounded Table**

left	center	right
item1	item2	item3

Hello world. Hello world.

§10.4:   Color Table

<div align="center">

Sec   11. — Notes[*]

</div>

∗11.1: Footnotes

Footnote[†]. Footnote[‡]. Footnote[§].
Minipage footnote[①].

[①]This is the minipage footnote.

Hello	World[§]
x	y

The counter is § and ①.
The forms can be §, ④.

†11.2: Marginnotes

Reversed
marginnote

Marginalnote
marginnote
Right margin-
note

[*]This is the footnote in the title.
[†]This is the first footnote.
[‡]This is the second footnote.
[§]This is the third footnote.
[§]This is the footnote in the tabular.

Sec   12. — LaTeX Logos

TEX, LATEX, LATEX 2$_\varepsilon$, X$_\exists$TEX, X$_\exists$LATEX, METAFONT, METAPOST, $\mathcal{A}_\mathcal{M}\mathcal{S}$

Sec 13. — **Structure Demostration**

No-index subsection

This is the first column. | This is the second column. | This is the third column.

The Title Of Both Columns

∗13.1: Structure Abbreviation

part: part
chap: chapter
sec: section
subsec: subsection
subsubsec: subsubsection
para: paragraph
subpara: subparagraph
fig: figure
tab: table
eq: equation
fn: footnote
item: item
thm: theorem
algo: algorithm

†13.2: Another Sub-section

‡13.3: Rotated Page

If pdflscape, then page rotate and text not; else lscape, then text rotate and page not.

Sec 14. — Macros

✳*14.1: Commands*

Junbo Wang
wjb loves learning.
wjb loves most learning.

†*14.2: Environments*

Computer Systems, A Programmer's Perspective.

—— 《*CSAPP*》

Sec 15. — Cross Reference

$$c^2 = a^2 + b^2 \qquad\qquad [15.1]$$

$$5^2 = 3^2 + 4^2 \qquad\qquad [15.2]$$

The gougu formula [15.1] appears in 41 page from section 15.

The gougu example Equation 15.2 appears in page 41 of 67 from section Cross Reference.

This is the reference from external cross reference file External Cross Reference File Section.

`https://www.sjtu.edu.cn`

`https://www.sjtu.edu.cn`

`E:\UsefulTools\Codes\LatexHowTo\LatexHowTo.tex`

SJTU Website

Gougu Formula

This is a line set as hyper target.

This is a line that can be click to hyperref to the hyper target.

Additional Subsetion

To bookmark

15.1: Another Subsetion $\frac{1}{\pi}$

Hello world!

Sec   16. — Literature Reference

∗16.1: Vanilla Bib

For Neural Volume Rendering survey, refer to [*1*, § 2.1]. For Neural Rendering survey, refer to [*3*]. For NeRF, refer to [*2*].

†16.2: Natbib

Can refer to Neural Rendering survey Tewari, Fried, Thies, Sitzmann, Lombardi, Sunkavalli, Martin-Brualla, Simon, Saragih, Nießner, Pandey, Fanello, Wetzstein, Zhu, Theobalt, Agrawala, Shechtman, Goldman, and Zollhöfer [*3*], and also special at NeRF [*1*].

[See also *1*, § 3.1], Dellaert and Yen-Chen [*1*, Only have prefix], [*1*, Only have prefix]

Dellaert and Yen-Chen, Dellaert and Yen-Chen, 2021, [2021], *1*

Dellaert and Yen-Chen *1*, *1*, [Can be just text], [Refer to *1*]

Dellaert and Yen-Chen [*1*], [*1*], Dellaert and Yen-Chen *1*, *1*, Dellaert and Yen-Chen

Sec 17. — Index

∗17.1: Vanilla Index

Here comes one key word.
Here comes another key word.
Here comes duplicated key word.
Here comes leveled 1 key word.
Here comes leveled 2 key word.
Here comes leveled 3 key word.
The before interval index.
The after interval index.
The reference index.
The reference index.
Here comes math key word.
Here comes command key word.
Here comes reserved key words.
Here comes newcommand key word.
Here comes newcommand key word.

†17.2: Glossary

<div align="center">

Sec 18. — Math

</div>

✳18.1: Overview

18.1.1 Inline Math Formula

$a + b = b + a, a + b = b + a, a + b = b + a.$

18.1.2 Displayed Math Formula

$$a + b = b + a,$$

$$a + b = b + a,$$

$$a + b = b + a.$$

18.1.3 Ensure Math Mode

18.1.4 Indexed Math Formula

Indexed math formula:

$$a + b = b + a \qquad\qquad [18.1]$$

None indexed math formula:

$$a + b = b + a$$

18.1.5 Text In Math Mode

$a + b = b + a$, where $a = 1$ and $b = 2$.

†18.2: Structure

18.2.1 Superscript And Subscript

$a_i = i^2$
$A_{ij} = 2^{i+j}$
$A_i^k = B_i^k$
$K_{n_i} = K_{2^i} = 2^{n_i} = 2^{2^i}$

Prime

$a', a'', a'_0 = a'_0, {a'}^2 \neq a'^2$

Digree

$90°$

Position

$$\max_n f(n) = \sum_{i=0}^n a_i = \int_0^n A(t)dt, \max_n f(n) = \sum_{i=0}^n a_i = \int_0^n A(t)dt$$

$$\max_n f(n) = \sum_{i=0}^n a_i = \int_0^n A(t)dt$$

$$\max_n f(n) = \sum_{i=0}^n a_i = \int_0^n A(t)dt$$

$$_m^n H_i^j$$

$$_a^b \sum_{i=1}^n {}_c^d A_i = \prod_k' f_i$$

$$\overset{*}{X}, X, \overset{*}{\underset{*}{X}}$$
$$A_m^n \neq A_m{}^n$$
$$M^a{}_b{}^{cd}{}_e, {}_b^a{}_d^c M^a{}_b{}^c{}_d$$

Mhchem

$$H_2O, CH_3COO^-, {}_{90}^{227}Th.$$

$$2\,H_2 + O_2 \xrightarrow{\text{fire}} 2\,H_2O \tag{18.2}$$

18.2.2 Overline And Underline

$$\overline{a+b} = \overline{a} + \overline{b}$$
$$\underline{a-b} = \underline{a} - \underline{b}$$
$$\overbrace{a+b+\cdots+c}^{n+1} = \underbrace{0+0+\cdots+0}_{n}+1$$
$$\overbracket{a+b+\cdots+c}^{n+1} = \underbracket{0+0+\cdots+0}_{n}+1$$
$$\overleftarrow{a+b}, \overrightarrow{a+b}, \overleftrightarrow{a+b}$$
$$\underleftarrow{a-b}, \underrightarrow{a-b}, \underleftrightarrow{a-b}$$

18.2.3 Fraction

Inline size: $\frac{a}{b}$.
Displayed size:

$$\frac{a}{b}$$

Inside size:

$$\frac{1}{\frac{1}{2}(a+b)} = \frac{2}{a+b}$$

Change size:

$$\frac{a}{b} = \frac{1}{\frac{b}{a}}$$

Continued fraction:

$$\cfrac{1}{1+\cfrac{2}{1+\cfrac{3}{1+x}}} = \cfrac{1}{1+\cfrac{2}{1+\cfrac{3}{1+x}}}$$

Inline ambiguity: $1/a + b$ and $^1\!/a + b$

Binomial

Inline size: $\binom{a}{b}$.
Displayed size:

$$\binom{a}{b}$$

Inside size:

$$\frac{1}{\binom{a}{b}}$$

Change size:

$$\binom{a}{b} \neq \frac{1}{\binom{b}{a}}$$

General Fraction

$$\begin{bmatrix} a \\ b \end{bmatrix} = \begin{bmatrix} a \\ b \end{bmatrix} = \left[\begin{smallmatrix} a \\ b \end{smallmatrix}\right]$$

18.2.4 Root

$$\sqrt{4} = \sqrt[3]{8}$$

$$\sqrt[n]{\frac{x}{y}}$$

$$\sqrt[n]{\frac{x}{y}}$$

$$\sqrt{\frac{1}{2}} < \sqrt{2} = \sqrt{2}$$
$$\sqrt{b}\sqrt{y}, \sqrt{b}\sqrt{y}$$

18.2.5 *Matrix*

$$A = \begin{matrix} a_{11} & a_{12} & a_{13} \\ a_{21} & a_{22} & a_{23} \\ a_{31} & a_{32} & a_{33} \end{matrix} \qquad B = \begin{bmatrix} b_{11} & b_{12} & b_{13} \\ b_{21} & b_{22} & b_{23} \\ b_{31} & b_{32} & b_{33} \end{bmatrix} \qquad C = \begin{vmatrix} c_{11} & c_{12} & c_{13} \\ c_{21} & c_{22} & c_{23} \\ c_{31} & c_{32} & c_{33} \end{vmatrix}$$

$$D = \begin{pmatrix} d_{11} & d_{12} & d_{13} \\ d_{21} & d_{22} & d_{23} \\ d_{31} & d_{32} & d_{33} \end{pmatrix} \qquad E = \begin{Bmatrix} e_{11} & e_{12} & e_{13} \\ e_{21} & e_{22} & e_{23} \\ e_{31} & e_{32} & e_{33} \end{Bmatrix} \qquad F = \begin{Vmatrix} f_{11} & f_{12} & f_{13} \\ f_{21} & f_{22} & f_{23} \\ f_{31} & f_{32} & f_{33} \end{Vmatrix}$$

$$\begin{matrix} & 1 & 2 & 3 \\ 1 & \begin{pmatrix} A & B & C \\ D & E & F \end{pmatrix} \\ 2 & \end{matrix}$$

$$\begin{pmatrix} 1 & 0 & & & \\ 0 & 1 & & & 0 \\ & & 1 & 0 \\ 0 & & 0 & 1 \end{pmatrix}$$

$$\begin{pmatrix} x & -y \\ y & x \end{pmatrix}$$

Dots In Matrix

$$\begin{bmatrix} a_{11} & \cdots & a_{1n} \\ & \ddots & \vdots \\ \cdots\cdots\cdots\cdots\cdots\cdots \\ 0 & & a_{nn} \end{bmatrix}$$

Matrix In Superscript And Subscript

$$\sum_{\substack{0<i<n \\ 0<j<i}} A_{ij}$$

$$\sum_{\substack{i<10\\j<100\\k<1000}} X(i,j,k) \qquad \sum_{\substack{i<10\\j<100\\k<1000}} Y(i,j,k) \qquad \sum_{\substack{i<10\\j<100\\k<1000}} Z(i,j,k)$$

Alignment In Matrix

$$\begin{pmatrix} 10 & -10 \\ -20 & 3 \end{pmatrix}$$

Array For Matrix

$$\begin{pmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$$

$$\begin{pmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$$

$$\begin{bmatrix} \begin{pmatrix} a & -b \\ -c & d \end{pmatrix} & \begin{matrix} 0 & 0 \\ 0 & 0 \end{matrix} \\ \begin{matrix} 0 & 0 \\ 0 & 0 \end{matrix} & \begin{pmatrix} -a & b \\ c & -d \end{pmatrix} \end{bmatrix}$$

♯18.3:   Fonts

$Hello123World$
Hello123World
Hello123World
Hello123World
Hello123World
Hello123World
$\mathcal{H}]\updownarrow\wr\infty\in\ni\mathcal{W}\wr\nabla\updownarrow\lceil$
$\mathbb{H}\ll\ll\bowtie\Vdash\nVdash\Vdash\mathbb{W}\bowtie\searrow\lessdot$
𝔥𝔢𝔩𝔩𝔬123𝔚𝔬𝔯𝔩𝔡

Special symbol should use special font in math mode instead of by default: i, e, π, $\int f(x)\,\mathrm{d}x$, $\iint \frac{\mathrm{d}y}{f(x,y)}\,\mathrm{d}x$

Multiply: xyz; Variable name: xyz.

Bold math: $\boldsymbol{a^2}, \boldsymbol{v}, \boldsymbol{\sum}, \boldsymbol{u} + \boldsymbol{u}, \boldsymbol{\int} < \int$

Font size:

$$\sum A(n)$$
$$\sum B(n)$$
$$\sum C(n)$$
$$\sum D(n)$$

§18.4:   Symbols

18.4.1 ① Normal Symbols And ② Variable Family

Lowercase Greek Letters

$$\alpha, \beta, \gamma, \delta, (\epsilon), \zeta, \eta, \theta, \iota, \kappa, \lambda, \mu, \nu, \xi, \pi, \rho, \sigma, \tau, \upsilon, (\phi), \chi, \psi, \omega$$
$$(\varepsilon), \vartheta, \varpi, \varrho, \varsigma, (\varphi), \varkappa, \digamma$$

Uppercase Greek Letters

$$\Gamma, \Delta, \Theta, \Lambda, \Xi, \Pi, \Sigma, \Upsilon, \Phi, \Psi, \Omega$$
$$\varGamma, \varDelta, \varTheta, \varLambda, \varXi, \varPi, \varSigma, \varUpsilon, \varPhi, \varPsi, \varOmega$$

Hebrew Alphabet

$$\aleph, \beth, \gimel$$

Upright Greek Letters

$$\alpha, \beta, \gamma, \delta, \epsilon, \eta, \theta, \iota, \kappa, \lambda, \mu, \nu, \xi, \pi, \rho, \sigma, \tau, \upsilon, \phi, \chi, \psi, \omega$$
$$\varepsilon, \vartheta, \varpi, \varrho, \varsigma, \varphi$$

Math Accents

$$\bar{a}, \acute{a}, \grave{a}, \breve{a}, \check{a}, \tilde{a}, \hat{a}, \vec{a}, \mathring{a}, \dot{a}, \ddot{a}, \overline{a}, \overline{a}$$
$$\underset{\sim}{abc}, \widehat{abc}, \widehat{abc}, \widehat{abc}$$
$$abc\breve{}, abc^\vee, abc\dot{}, abc\ddot{}, abc\dddot{}, abc\widehat{}, abc\sim$$
$$\overset{*}{a}, \underset{*}{a}, \underset{\smile}{a}$$

Change the accents position: $\ddot{h}$ vs $\ddot{h}$.

Symbols

$$\hbar, \hbar, \imath, \jmath, \ell, \wp, \Re, \Im, \mho, \eth, \beth, \gimel, \Bbbk$$
$$\partial, \infty, \diagup, \diagdown, (\emptyset), (\varnothing), \forall, \exists, \nexists, \neg, \top, \bot, \surd, \angle, \vartriangleleft, \measuredangle$$
$$\flat, \natural, \sharp$$
$$\nabla, \triangle, \vartriangle, \blacktriangle, \triangledown, \blacktriangledown, \square, \blacksquare, \Diamond, \blacklozenge, \clubsuit, \spadesuit, \lozenge, \heartsuit, \bigstar$$
$$\backslash, \diagup, \diagdown, \circledS, \complement$$

18.4.2 ③ Operators

Large Operators

$$\sum, \prod, \coprod, \int, \oint$$

$$\bigcup, \biguplus, \bigsqcup, \bigvee, \bigwedge, \bigcap$$

$$\bigodot, \bigoplus, \bigotimes$$

$$\iint, \iiint, \iiiint, \int \cdots \int$$

Word Operators

Non-limit $\log x, \lg x, \ln x$
$\sin x, \arcsin x, \cos x, \arccos x, \tan x, \arctan x, \cot x$
$\sinh x, \cosh x, \tanh x, \coth x, \sec x, \csc x$
$\arg x, \ker x, \dim x, \hom x, \exp x, \deg x$
$r = m \bmod n, r = m \pmod n$
$r = m \mod n, r = m \pod n$

With-limit $\lim x, \limsup x, \liminf x, \max x, \min x$
$\sup x, \inf x, \det x, \Pr x, \gcd x$
$\varliminf x, \varlimsup x, \operatorname{inj\,lim} x, \operatorname{proj\,lim} x, \varinjlim x, \varprojlim x$

Customize Operators

$$|A| = \operatorname{card}(A)$$
$$\operatorname{Prob}(X) = 0$$

18.4.3 ④ Binary Operators And ⑤ Relation Operators

Binary Operators

$$a + b, a - b, a * b$$
$$a \triangleleft b, a \triangleright b, a \triangle b, a \triangledown b$$
$$a \wedge b, a \vee b, a \cap b, a \cup b, a \sqcap b, a \sqcup b, a \uplus b, a \amalg b$$
$$a \div b, a * b, a \times b, a \cdot b, a \star b, a \mp b, a \pm b, a \setminus b$$
$$a \circ b, a \bigcirc b, a \bullet b, a \diamond b, a \odot b, a \oslash b, a \otimes b, a \oplus b$$
$$a \wr b, a \dagger b, a \ddagger b$$

$$a \dotplus b, a \smallsetminus b, a \top b, a \curlywedge b, a \curlyvee b, a \mathbf{.} b$$
$$a \Cap b, a \Cup b, a \overline{\wedge} b, a \veebar b, a \overline{\overline{\wedge}} b$$
$$a \boxminus b, a \boxdot b, a \boxplus b, a \ominus b, a \circledast b, a \circledcirc b$$
$$a \ltimes b, a \rtimes b, a \divideontimes b, a \searrow b, a \swarrow b$$
$$a \vartriangleleft b, a \trianglelefteq b, a \vartriangleright b, a \trianglerighteq b$$
Used to turn into binary operator, $a \heartsuit b$.

Relation Operators

$$a = b, a > b, a < b, a : b$$
$$a \neq b, a \ngtr b, a \nless b$$
$$a \leq b, a \nleq b, a \leqslant b, a \geq b, a \ngeq b, a \geqslant b, a \ll b, a \gg b$$
$$a \prec b, a \nprec b, a \succ b, a \nsucc b$$
$$a \preceq b, a \npreceq b, a \precnapprox b, a \succeq b, a \nsucceq b, a \succnapprox b$$
$$a \sim b, a \nsim b, a \approx b, a \simeq b, a \cong b, a \ncong b, a \equiv b, a \doteq b$$
$$a \in b, a \notin b, a \ni b, a \subset b, a \supset b$$
$$a \subseteq b, a \nsubseteq b, a \subsetneq b, a \subsetneqq b, a \supseteq b, a \nsupseteq b, a \supsetneq b, a \supseteqq b$$

$a \smile b, a \frown b, a \perp b, a \models b, a \vdash b, a \nvdash b, a \dashv b$

$a \mid b, a \nmid b, a \parallel b, a \nparallel b$

$a \propto b, a \asymp b, a \bowtie b, a \Join b$

$a \leqq b, a \nleqq b, a \lneqq b, a \lneq b, a \geqq b, a \ngeqq b, a \gneqq b, a \gneq b$

$a \leqslant b, a \nleqslant b, a \geqslant b, a \ngeqslant b$

$a \lesssim b, a \lnsim b, a \gtrsim b, a \gnsim b, a \lessapprox b, a \lnapprox b, a \gtrapprox b, a \gnapprox b$

$a \precsim b, a \precnsim b, a \succsim b, a \succnsim b, a \precapprox b, a \precnapprox b, a \succapprox b, a \succnapprox b$

$a \subseteq b, a \nsubseteq b, a \subsetneq b, a \subsetneqq b, a \supseteq b, a \nsupseteq b, a \supsetneq b, a \supsetneqq b$

$a \vartriangleleft b, a \ntriangleleft, a \vartriangleright b, a \ntriangleright b, a \trianglelefteq b, a \ntrianglelefteq b, a \trianglerighteq b, a \ntrianglerighteq$

$a \mid b, a \nmid b, a \parallel b, a \nparallel b$

$a \vDash b, a \nvDash b, a \Vdash b, a \nVdash b, a \Vvdash b, a \nVDash$

$a \lessdot b, a \gtrdot b, a \backcong b, a \lessdot b, a \gtrdot b, a \lll b, a \ggg b$

$a \lessgtr b, a \gtrless b, a \lesseqgtr b, a \gtreqless b, a \eqless b, a \eqgtr b$

$a \doteq b, a \triangleq b, a \doteqdot b, a \circeq b, a \risingdotseq b, a \fallingdotseq b$

$a \curlyeqprec b, a \sim b, a \simeq b, a \approx b$

$a \preccurlyeq b, a \succcurlyeq b, a \sqsubseteq b, a \sqsupseteq b, a \sqsubset b, a \sqsupset b, a \Subset b, a \Supset b$

$a \smile b, a \frown b, a \eqcirc b, a \wedgeq b, a \varoslash b, a \pitchfork b, a \varpropto b, a \backepsilon b$

$a \blacktriangleleft b, a \blacktriangleright b$

$a \therefore b, a \because b$

Used to turn into relation operator, $a \overline{\in} b$.

Arrows

$a \leftarrow b, a \nleftarrow b, a \rightarrow b, a \nrightarrow b$

$a \Leftarrow b, a \nLeftarrow b, a \Rightarrow b, a \nRightarrow b$

$a \leftrightarrow b, a \nleftrightarrow b, a \Leftrightarrow b, a \nLeftrightarrow b$

$a \longleftarrow b, a \longrightarrow b, a \Longleftarrow b, a \Longrightarrow b, a \longleftrightarrow b, a \Longleftrightarrow b$

$$a \mapsto b, a \longmapsto b, a \hookleftarrow b, a \hookrightarrow b$$

$$a \leftharpoondown b, a \rightharpoonup b, a \leftharpoonup b, a \rightharpoondown b, a \rightleftharpoons b$$

$$a \nearrow b, a \searrow b, a \swarrow b, a \nwarrow b$$

$$a \uparrow b, a \Uparrow b, a \downarrow b, a \Downarrow b, a \updownarrow b, a \Updownarrow b$$

$$a \Leftarrow b, a \Rightarrow b, a \leftrightarrows b, a \rightleftarrows b, a \upuparrows b, a \downdownarrows b$$

$$a \Lleftarrow b, a \Rrightarrow b, a \twoheadleftarrow b, a \twoheadrightarrow b, a \leftarrowtail b, a \rightarrowtail b$$

$$a \leftleftarrows b, a \rightrightarrows b, a \upharpoonleft b, a \upharpoonright b, a \downharpoonleft b, a \downharpoonright b$$

$$a \leftharpoondown b, a \rightharpoonup b, a \circlearrowleft b, a \circlearrowright b, a \curvearrowleft b, a \curvearrowright b, a \looparrowleft b, a \looparrowright b$$

$$a \multimap b, a \rightsquigarrow b, a \leftrightsquigarrow b, a \leadsto b$$

Logical Operators

$$P \iff Q$$
$$P \implies Q$$
$$P \impliedby Q$$

Stack Relation

$$f(x) \stackrel{\mathrm{d}}{=} ax + b$$

$$A \xleftarrow{0<x<1} B \xrightarrow[x\leq 0]{x\geq 1} C$$

$$A \xleftarrow{0<x<1} B \xrightarrow[x\leq 0]{x\geq 1} C$$

$$A \xLeftarrow{0<x<1} B \xRightarrow[x\leq 0]{x\geq 1} C$$

$$A \xleftrightarrow{a+b+c} B \xLeftrightarrow[xyz]{a+b+c} A \xrightarrow{a+b+c} B \xLeftarrow[xyz]{a+b+c} A$$

$$A \xLeftrightarrow[xyz]{a+b+c} B$$

18.4.4 ⑥ *Parentheses And* ⑦ *Delimiters*

$(Hello), [Hello], \{Hello\}, \langle Hello \rangle, \lfloor Hello \rfloor, \lceil Hello \rceil$

$(Hello|World), \left(Hello \mid World\right), \left(Hello \,\middle|\, World\right), \left(Hello \,\middle|\, World\right), \left(Hello \,\middle|\, World\right)$

18.4.5 ⑧ *Punctuations*

$x \colon f(x)$ vs $x : f(x)$

$1, \ldots, n, 1 + \cdots + n, (1, \ldots, 1) + \cdots + (n, \ldots, n)$

$1, \vdots, n, 1, \ddots n, 1, \iddots n$

$1, \ldots, n, 1 + \cdots + n, 1 \cdots n, \int_0^1 \cdots \int_0^1, \ldots$

¶18.5: *Multiple-line Formula*

18.5.1 *Different Formula Different Lines*

$$a + b = b + a \qquad [18.3]$$
$$a - b = b - a \qquad [18.4]$$
$$a \times b = b \times a$$
$$a \div b \neq b \div a \qquad [18.5]$$

$$
\begin{aligned}
d &= a + b + c & t &= r \times s \\
z &= x - y & q &= l \div m \div n \div o \div p
\end{aligned}
\qquad [18.6]
$$

$$
\begin{aligned}
&(a+b)(a-b) + 2ab \\
={}& a^2 - b^2 + 2ab \\
={}& (a-b)^2
\end{aligned}
\qquad [18.7]
$$

$$
\begin{aligned}
&(a+b)(a-b) + 2ab \\
={}& a^2 - b^2 + 2ab \\
={}& (a-b)^2
\end{aligned}
\qquad [18.8]
$$

$$x^2 + 2x = -1 \qquad [18.9]$$

transpose got

$$x^2 + 2x + 1 = 0 \qquad [18.10]$$

merge got

$$(x+1)^2 = 0 \qquad [18.11]$$

$$2 = 1 + 1 \hspace{8cm} 1 = 1 \times 1 \quad [\textit{18.12}]$$
$$20 = 10 + 10 \hspace{6.5cm} 100 = 10 \times 10 \ [\textit{18.13}]$$

$$x = \sin t \quad y = \cos t \hspace{4cm} [\textit{18.14}]$$
$$z = \tan t \quad w = \cot t \hspace{4cm} [\textit{18.15}]$$

$$a_{11}x + a_{12}y + a_{13}z = A \hspace{4cm} [\textit{18.16a}]$$
$$a_{21}x + a_{22}y + a_{23}z = B \hspace{4cm} [\textit{18.16b}]$$
$$a_{31}x + a_{32}y + a_{33}z = C \hspace{4cm} [\textit{18.16c}]$$

18.5.2 One Formula Into Lines

$$1 + 2 + 3$$
$$+ 4 + 5 + 6$$
$$+ 7 + 8 + 9$$
$$+ 10 + 11 + 12$$
$$+ 13 + 14 + 15 \hspace{3cm} [\textit{18.17}]$$

18.5.3 Lines Into One Formula

$$D(x) = \begin{cases} 1, & \text{if } x \in \mathbb{Q}; \\ 0, & \text{if } x \in \mathbb{R} \setminus \mathbb{Q}. \end{cases} \hspace{3cm} [\textit{18.18}]$$

$$D(x) = \begin{cases} 1, & \text{if } x \in \mathbb{Q}; \hspace{3cm} [\textit{18.19}] \\ 0, & \text{if } x \in \mathbb{R} \setminus \mathbb{Q}. \hspace{2.5cm} [\textit{18.20}] \end{cases}$$

$$\begin{matrix} S \subseteq T \\ S \supseteq T \end{matrix} \implies S = T \hspace{3cm} [\textit{18.21}]$$

$$\begin{matrix} f(x) \leq x \\ x \leq f(x) \end{matrix} \implies f(x) = x \hspace{3cm} [\textit{18.22}]$$

$$\begin{matrix} f(x) \in x & g(x) \subset x \\ x \in f(x) & x \subset g(x) \end{matrix} \implies f(x) = x, g(x) = x \hspace{2cm} [\textit{18.23}]$$

□*18.6: Index*

$$a^2 + b^2 = c^2 \hspace{4cm} [18.23]$$
$$a^2 + b^2 = c^2 \hspace{4cm} [\star]$$
$$a^2 + b^2 = c^2 \hspace{4cm} [gougu]$$

✶✶*18.7: Seperate*

$$a + b \quad a+b \quad a+b$$

$$\max n \quad \max n \quad \max n$$

$$[\,] : 3mu \hspace{4cm} [18.24]$$
$$[\,] or [\,] : 4muplus2muminus4mu \hspace{3cm} [18.25]$$
$$[\,] : 5muplus5mu \hspace{4cm} [18.26]$$
$$\| : -3mu \hspace{4cm} [18.27]$$
$$[\quad] : 18mu \hspace{4cm} [18.28]$$
$$[\quad] : 1em \hspace{4cm} [18.29]$$
$$[\qquad] : 2em \hspace{4cm} [18.30]$$

††*18.8: Hyphenation*

$$F(x)G(x)H(x)$$

<div align="center">

Sec 19. — Figure

</div>

∗19.1: Overview

LATEX LATEX LATEX LATEX Figures/png/LatexLogo.png

†19.2: Float Figure

19.2.1 Overview

<div align="center">

LATEX

</div>

<div align="center">

FigureName 1: Latex Logo - Example Of Float Figure

图名 1: 浮动图片的例子

</div>

19.2.2 Rotated Figure

Figure 2: Latex Logo

19.2.3 **Side By Side**

Figure With Words

This is the comment on the figure.

Figure 3: Figure With Words Example

Figures Side By Side

Figure 4: Figure Side By Side Example

Captions For Side By Side

Figure 5: Title For Both

Figure 6: Title For Left Figure 7: Title For Right

Figure 8: Title For Both

(a) Title For Left *(b) Title For Right*

19.2.4 Figure Arounded By Words

These are the words around the figure, and the figure will appear below two lines, lying in the right of the words, rather than left. The following will be fillings. Hello world. Hello world. Hello

world. Hello world. Hello

Figure 9: Title Of Arounded Figure

world. Hello world. Hello world. Hello world. Hello world. Hello world. Hello world. Hello world. Hello world. Hello world. Hello world. Hello world. Hello world. Hello world.

Hello world. Hello world. Hello world. Hello world. Hello world.

These are the words around the figure, and the figure will appear with height of 10 lines, lying in the right of the words, rather than left, and it will extend out 1.5cm, and has width of 5cm. The following will be fillings. Hello world.

Figure 10: Title Of Arounded Figure

Hello world. Hello world.

19.2.5 **General Float Control**

Float Title 19.1 Figure In myfloat

$$\text{L\!A\!T\!E\!X}$$

mynewfloat 19.1: Figure In mynewfloat

‡19.3: Color

Red texts with blue words texts.
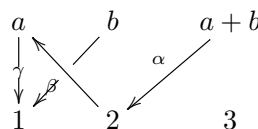
Yellow box

Black line green box

50% gray text, dark yellow text, light purple text

70% purple text, mixed blue and black text, red complementary text

darkred text

§19.4: Drawing

19.4.1 XY-pic

[*19.1*]

When $A \xrightarrow{f} B$ in line text. When $A \xrightarrow{f} B$ in line text. When $A \xrightarrow{f} B$ in line text. When $A \xrightarrow{f} B$ in line text.

When $A \longrightarrow B$ in line text. When $A --\rightarrow B$ in line text. When $A \Longrightarrow B$ in line text. When $A \rightsquigarrow B$ in line text. When $A \dashrightarrow B$ in line text. When $A \Longrightarrow B$ in line text. When $A \longrightarrow B$ in line text. When $A \quad B$ in line text. When $A \longmapsto\!\!\!\rightarrow B$ in line text. When $A \longrightarrow B$ in line text.

When $A \overset{\frown}{\quad} B$ in line text. When $A \searrow B$ in line text. When $A \circlearrowleft B$ in line text.

When $A \underset{\rightarrow}{\leftarrow} B$ in line text.

$$\text{L\!A\!T\!E\!X}$$

Figure 11: Figure In Top Of Next Page

$$A \xrightarrow{\;\boxed{m}\;} B \qquad\qquad [19.2]$$

$$C \xrightarrow[m]{\quad\quad} D \qquad\qquad$$

$$\text{Cat} \xrightarrow{\;f\;} \text{Dog} \qquad\qquad [19.3]$$

$$
\begin{array}{ccc}
 & B & \\
 \nearrow & & \searrow \\
A & & D \\
 \nwarrow & & \swarrow \\
 & C &
\end{array}
\qquad\qquad [19.4]
$$

19.4.2 *PSTricks*

P Q

$120°$

P_0 $0°$ $90°$ Q_0 $180°$ $\sin x$
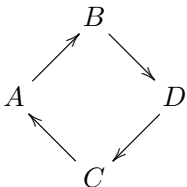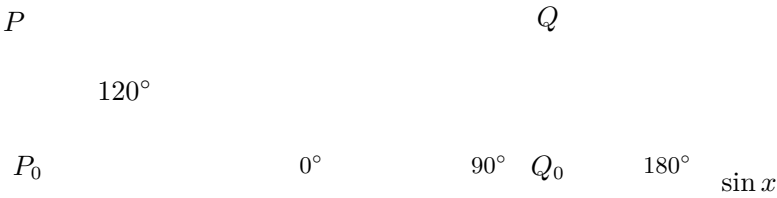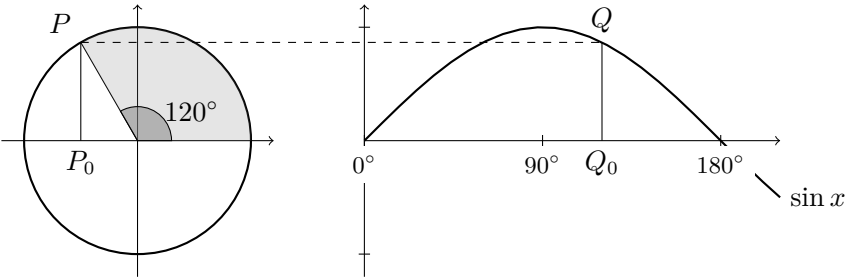
Figure 12: PSTricks Example

19.4.3 *TikZ*

Figure 13: TikZ Example

A — *Appendix Section*

This is the section of appendix.

Title of Literature References

Literatures referenced as follows.

[**1.**] Frank Dellaert and Lin Yen-Chen. Neural volume rendering: Nerf and beyond. https://dellaert.github.io/NeRF/, 2021.

[**2.**] Ben Mildenhall, Pratul P. Srinivasan, Matthew Tancik, Jonathan T. Barron, Ravi Ramamoorthi, and Ren Ng. NeRF: Representing scenes as neural radiance fields for view synthesis. In *The European Conference on Computer Vision (ECCV)*, 2020.

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Title of Index List 1

Index list 1 as follows.

Title of Index List 2

Index list 2 as follows.