1 Greek letters

Uppercase and lowercase Greek letters are a common symbology. These letters must be typed in math environments.

Name	Typeset
alpha	α
beta	β
gamma	γ
delta	δ
epsilon	ϵ
zeta	ζ
eta	η
theta	θ
iota	ι
kappa	κ
lambda	λ
mu	μ
nu	ν
xi	ξ
pi	π
rho	ρ
sigma	σ
tau	τ
upsilon	υ
phi	ϕ
chi	χ
psi	ψ
omega	ω
varepsilon	ε
vartheta	ϑ
varpi	ϖ
varrho	ϱ
varsigma	ς
varphi	φ
digamma	$\digamma$
varkappa	$\varkappa$

Table 1: Lowercase Greek letters (see source for type or command)

Name	Typeset	Typeset
alpha	A (just type A)	
gamma	Γ	
delta	Δ	
theta	Θ	
lambda	Λ	
xi	Ξ	
pi	Π	
sigma	Σ	
upsilon	Υ	
phi	Φ	
psi	Ψ	
omega	Ω	
vargamma	$\varGamma$	
vardelta	$\varDelta$	
vartheta	$\varTheta$	
varlambda	$\varLambda$	
varxi	$\varXi$	
varpi	$\varPi$	
varsigma	$\varSigma$	
varupsilon	$\varUpsilon$	
varphi	$\varPhi$	
varpsi	$\varPsi$	
varomega	$\varOmega$	

Table 2: Uppercase Greek letters (see source for type or command)

2 Delimiters

Delimiters enclose expressions.Like Greek letters, delimiters always go inside math environments.

Name	Typeset
left parenthesis	(
right parenthesis	)
left bracket	[
right bracket	]
left brace	{
right brace	}
backslash	\
forward slash	/
left angle bracket	⟨
right angle bracket	⟩
vertical line	|
double vertical line (note this one)	‖
left floor	⌊
right floor	⌋
left ceiling	⌈
right ceiling	⌉
upward	↑
double upward	⇑
downward	↓
double downward	⇓
up-and-down	↕
double up-and-down	⇕
upper-left corner	⌜
upper-right corner	⌝
lower-left corner	⌞
lower-right corner	⌟

Table 3: Delimiters (see source for type or command)

With the exception of the corner delimiters, it is possible to stretch delimiters with \left and \right, in the form \left *delim1* \right *delim2*.

For example:

$$\left| \frac{a+b}{2} \right|$$

Note that the slightly modified command \left. introduces a blank delimiter (as does the right counterpart) and is needed when stretching sible delimiters.

$F(x)\big|_a^b$ note how this stretches the F to match the vertical bar

3 Operators

LaTeX defines e.g. trigonometric functions and mathematical limits as operators. The former does not involve limits while the latter can.

Typeset
arccos
arcsin
arctan
arg
cos
cosh
cot
coth
csc
deg
dim
exp
hom
ker
lg
ln
log
sec
sin
sinh
tan
tanh

Table 4: Operators without limits (see source for type or command)

Typeset
det
gcd
inf
lim
lim inf
inj lim
$\varprojlim$
$\varinjlim$
lim sup
max
min
Pr
sup
proj lim
$\varprojlim$
$\varprojlim$

Table 5: Operators with limits (see source for type or command)

The limits to the operators are passed as parameters, for example:

$$\operatorname*{proj\,lim}_{x \to 0}$$

One can force limits in the subscript position with command \nolimits:

$$\operatorname{proj\,lim}_{x \to 0}$$

4 Multiline subscripts and superscripts

It is also possible to apply multiline subscripts and superscripts, with \substack. Each line is delimited with double backslashes:

$$\sum_{\substack{i<n \\ i\,\text{even}}} x_i^2$$

To place the subscripts and superscripts flushed-left, use \subarray instead of \substack:

$$\sum_{\substack{i<n \\ i\,\text{even}}} x_i^2$$

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5 Math accents

Like text accents, these typically require a letter to accent but must be used within math environments.

Typeset
$\acute{a}$
$\bar{a}$
$\breve{a}$
$\check{a}$
$\dot{a}$
$\ddot{a}$
$\dddot{a}$
$\ddddot{a}$
$\grave{a}$
$\hat{a}$
$\widehat{a}$
$\mathring{a}$
$\tilde{a}$
$\widetilde{a}$
$\vec{a}$

Table 6: Math accents (see source for type or command)

6 Stretchable horizontal lines

Three types in LaTeX: braces, bars and arrows.

Braces are typset with \overbrace. A superscripts is optional. For example:

$$\overbrace{a + b + \cdots + n}^{m}$$

Similarly, \underbrace and optional subscripts are possible:

$$\underbrace{a + b + \cdots + n}_{m}$$

Both braces can be nested.

Bars are typset with \underline and \overline as required, here shown as nested lines:

$$\overline{X \cup \overline{\overline{X}}} = \overline{\overline{X}}$$

Arrows are either over or under and left, leftright or right, and have the same sort of features as braces and bars. Some examples:

$$\overleftarrow{a}$$
$$\overrightarrow{ab}$$
$$\overleftrightarrow{abc}$$

The environment denoted by `gather` is used to gather single line formulae, in this case without numbering (as denoted by the asterisk).