

# Emacs TeQ: (T<sub>E</sub>X + Quail)

Input Method written in Quail for entering L<sup>A</sup>T<sub>E</sub>X math expressions

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# 1 Alphabet related stuff [0/3]:

## 1.1 Greek

Table 1: Main Greek letters

key	sym	latex (lower greek)	key	sym	latex (upper greek)
a.	$\alpha$	<code>\alpha</code>	A.	$A$	<code>A</code>
b.	$\beta$	<code>\beta</code>	B.	$B$	<code>B</code>
c.	$\psi$	<code>\psi</code>	C.	$\Psi$	<code>\Psi</code>
d.	$\delta$	<code>\delta</code>	D.	$\Delta$	<code>\Delta</code>
e.	$\epsilon$	<code>\epsilon</code>	E.	$E$	<code>E</code>
f.	$\phi$	<code>\phi</code>	F.	$\Phi$	<code>\Phi</code>
g.	$\gamma$	<code>\gamma</code>	G.	$\Gamma$	<code>\Gamma</code>
h.	$\eta$	<code>\eta</code>	H.	$H$	<code>H</code>
i.	$\iota$	<code>\iota</code>	I.	$I$	<code>I</code>
j.	$\xi$	<code>\xi</code>	J.	$\Xi$	<code>\Xi</code>
k.	$\kappa$	<code>\kappa</code>	K.	$K$	<code>K</code>
l.	$\lambda$	<code>\lambda</code>	L.	$\Lambda$	<code>\Lambda</code>
m.	$\mu$	<code>\mu</code>	M.	$M$	<code>M</code>
n.	$\nu$	<code>\nu</code>	N.	$N$	<code>N</code>
o.	$o$	<code>o</code>	O.	$O$	<code>O</code>
p.	$\pi$	<code>\pi</code>	P.	$\Pi$	<code>\Pi</code>
r.	$\rho$	<code>\rho</code>	R.	$P$	<code>P</code>
s.	$\sigma$	<code>\sigma</code>	S.	$\Sigma$	<code>\Sigma</code>
t.	$\tau$	<code>\tau</code>	T.	$T$	<code>T</code>
th.	$\theta$	<code>\theta</code>	Th.	$\Theta$	<code>\Theta</code>
u.	$v$	<code>\upsilon</code>	U.	$\Upsilon$	<code>\Upsilon</code>
w.	$\omega$	<code>\omega</code>	W.	$\Omega$	<code>\Omega</code>
x.	$\chi$	<code>\chi</code>	X.	$X$	<code>X</code>
z.	$\zeta$	<code>\zeta</code>	Z.	$Z$	<code>Z</code>

Table 2: Variation Greek letters

key	sym	latex (lower greek)
e..	$\varepsilon$	<code>\varepsilonpsilon</code>
f..	$\varphi$	<code>\varphiphi</code>
s..	$\varsigma$	<code>\varsigmaigma</code>
t..	$\vartheta$	<code>\varthetatheta</code>
r..	$\varrho$	<code>\varrrho</code>
p..	$\varpi$	<code>\varppi</code>
k..	$\varkappa$	<code>\varkappaappa</code>

## 1.2 Matrix (aka bold)

Table 3: Matrix

key	sym	latex (upper bold)	key	sym	latex (lower bold)
Am	<b>A</b>	<code>\mathbf{A}</code>	am	<b>a</b>	<code>\mathbf{a}</code>
Bm	<b>B</b>	<code>\mathbf{B}</code>	bm	<b>b</b>	<code>\mathbf{b}</code>
Cm	<b>C</b>	<code>\mathbf{C}</code>	cm	<b>c</b>	<code>\mathbf{c}</code>
Dm	<b>D</b>	<code>\mathbf{D}</code>	dm	<b>d</b>	<code>\mathbf{d}</code>
Em	<b>E</b>	<code>\mathbf{E}</code>	em	<b>e</b>	<code>\mathbf{e}</code>
Fm	<b>F</b>	<code>\mathbf{F}</code>	fm	<b>f</b>	<code>\mathbf{f}</code>
Gm	<b>G</b>	<code>\mathbf{G}</code>	gm	<b>g</b>	<code>\mathbf{g}</code>
Hm	<b>H</b>	<code>\mathbf{H}</code>	hm	<b>h</b>	<code>\mathbf{h}</code>
Im	<b>I</b>	<code>\mathbf{I}</code>	im	<b>i</b>	<code>\mathbf{i}</code>
Jm	<b>J</b>	<code>\mathbf{J}</code>	jm	<b>j</b>	<code>\mathbf{j}</code>
Km	<b>K</b>	<code>\mathbf{K}</code>	km	<b>k</b>	<code>\mathbf{k}</code>
Lm	<b>L</b>	<code>\mathbf{L}</code>	lm	<b>l</b>	<code>\mathbf{l}</code>
Mm	<b>M</b>	<code>\mathbf{M}</code>	mm	<b>m</b>	<code>\mathbf{m}</code>
Nm	<b>N</b>	<code>\mathbf{N}</code>	nm	<b>n</b>	<code>\mathbf{n}</code>
Om	<b>O</b>	<code>\mathbf{O}</code>	om	<b>o</b>	<code>\mathbf{o}</code>
Pm	<b>P</b>	<code>\mathbf{P}</code>	pm	<b>p</b>	<code>\mathbf{p}</code>
Qm	<b>Q</b>	<code>\mathbf{Q}</code>	qm	<b>q</b>	<code>\mathbf{q}</code>
Rm	<b>R</b>	<code>\mathbf{R}</code>	rm	<b>r</b>	<code>\mathbf{r}</code>
Sm	<b>S</b>	<code>\mathbf{S}</code>	sm	<b>s</b>	<code>\mathbf{s}</code>
Tm	<b>T</b>	<code>\mathbf{T}</code>	tm	<b>t</b>	<code>\mathbf{t}</code>
Um	<b>U</b>	<code>\mathbf{U}</code>	um	<b>u</b>	<code>\mathbf{u}</code>
Vm	<b>V</b>	<code>\mathbf{V}</code>	vm	<b>v</b>	<code>\mathbf{v}</code>
Wm	<b>W</b>	<code>\mathbf{W}</code>	wm	<b>w</b>	<code>\mathbf{w}</code>
Xm	<b>X</b>	<code>\mathbf{X}</code>	xm	<b>x</b>	<code>\mathbf{x}</code>
Ym	<b>Y</b>	<code>\mathbf{Y}</code>	ym	<b>y</b>	<code>\mathbf{y}</code>
Zm	<b>Z</b>	<code>\mathbf{Z}</code>	zm	<b>z</b>	<code>\mathbf{z}</code>

### 1.3 Vector & Hat

Table 4: Vectors and Hats

key	sym	latex (vec)	key	sym	latex (hat)
av	$\vec{a}$	<code>\vec{a}</code>	ah	$\hat{a}$	<code>\hat{a}</code>
bv	$\vec{b}$	<code>\vec{b}</code>	bh	$\hat{b}$	<code>\hat{b}</code>
cv	$\vec{c}$	<code>\vec{c}</code>	ch	$\hat{c}$	<code>\hat{c}</code>
dv	$\vec{d}$	<code>\vec{d}</code>	dh	$\hat{d}$	<code>\hat{d}</code>
ev	$\vec{e}$	<code>\vec{e}</code>	eh	$\hat{e}$	<code>\hat{e}</code>
fv	$\vec{f}$	<code>\vec{f}</code>	fh	$\hat{f}$	<code>\hat{f}</code>
gv	$\vec{g}$	<code>\vec{g}</code>	gh	$\hat{g}$	<code>\hat{g}</code>
hv	$\vec{h}$	<code>\vec{h}</code>	hh	$\hat{h}$	<code>\hat{h}</code>
iv	$\vec{i}$	<code>\vec{i}</code>	ih	$\hat{i}$	<code>\hat{i}</code>
jv	$\vec{j}$	<code>\vec{j}</code>	jh	$\hat{j}$	<code>\hat{j}</code>
kv	$\vec{k}$	<code>\vec{k}</code>	kh	$\hat{k}$	<code>\hat{k}</code>
lv	$\vec{l}$	<code>\vec{l}</code>	lh	$\hat{l}$	<code>\hat{l}</code>
mv	$\vec{m}$	<code>\vec{m}</code>	mh	$\hat{m}$	<code>\hat{m}</code>
nv	$\vec{n}$	<code>\vec{n}</code>	nh	$\hat{n}$	<code>\hat{n}</code>
ov	$\vec{o}$	<code>\vec{o}</code>	oh	$\hat{o}$	<code>\hat{o}</code>
pv	$\vec{p}$	<code>\vec{p}</code>	ph	$\hat{p}$	<code>\hat{p}</code>
qv	$\vec{q}$	<code>\vec{q}</code>	qh	$\hat{q}$	<code>\hat{q}</code>
rv	$\vec{r}$	<code>\vec{r}</code>	rh	$\hat{r}$	<code>\hat{r}</code>
sv	$\vec{s}$	<code>\vec{s}</code>	sh	$\hat{s}$	<code>\hat{s}</code>
tv	$\vec{t}$	<code>\vec{t}</code>	th	$\hat{t}$	<code>\hat{t}</code>
uv	$\vec{u}$	<code>\vec{u}</code>	uh	$\hat{u}$	<code>\hat{u}</code>
vv	$\vec{v}$	<code>\vec{v}</code>	vh	$\hat{v}$	<code>\hat{v}</code>
wv	$\vec{w}$	<code>\vec{w}</code>	wh	$\hat{w}$	<code>\hat{w}</code>
xv	$\vec{x}$	<code>\vec{x}</code>	xh	$\hat{x}$	<code>\hat{x}</code>
yv	$\vec{y}$	<code>\vec{y}</code>	yh	$\hat{y}$	<code>\hat{y}</code>
zv	$\vec{z}$	<code>\vec{z}</code>	zh	$\hat{z}$	<code>\hat{z}</code>

## 2 Function Expansion

Table 5: Keys that will execute some elisp functions

key	trans	sym	description
/	quail-TeX-fraction	$\frac{\Box}{\Box}$	fraction on previous
eq	quail-TeX-equation		equation environment
al	quail-TeX-aligned		aligned environment
el	quail-TeX-endofline		end of line

## 3 Symbols [0/5]:

### 3.1 Dots related

Table 6: Multiple Dots Related

key	trans	sym	description
...	<code>\dots</code>	...	3 dots
.v	<code>\vdots</code>	$\vdots$	vertical dots
.d	<code>\ddots</code>	$\ddots$	diagonale dots
.l	<code>\ldots</code>	...	low dots

### 3.2 Geometry

Table 7:

key	trans	sym	description
perp	<code>\perp</code>	$\perp$	
perpn	<code>\perp</code>	$\nparallel$	
para	<code>\parallel</code>	$\parallel$	
paran	<code>\nparallel</code>	$\nparallel$	
ang	<code>\angle</code>	$\angle$	
ang.	<code>\measuredangle</code>	$\sphericalangle$	

### 3.3 Letter like

Table 8: Letter-like Symbol

key	trans	sym	description
inf	<code>\infty</code>	$\infty$	
ex	<code>\exists</code>	$\exists$	
ex.	<code>\nexists</code>	$\nexists$	
fa	<code>\forall</code>	$\forall$	
hb	<code>\hbar</code>	$\hbar$	
hb.	<code>\hslash</code>	$\hslash$	
dd	<code>\mathrm{d}</code>	$\mathrm{d}$	
dd.	<code>\partial</code>	$\partial$	
ii	<code>\imath</code>	$\imath$	
jj	<code>\jmath</code>	$\jmath$	
nab	<code>\nabla</code>	$\nabla$	
cm	<code>\checkmark</code>	$\checkmark$	

### 3.4 Spaces

Table 9: Space Symbol

key	trans	sym	description
qu	<code>\quad</code>		
quu	<code>\qquad</code>		



### 3.5 Arrows:

#### 3.5.1 Single:

Table 10: Single Line arrows

key	trans	sym	description
<-	<code>\leftarrow</code>	$\leftarrow$	left arrow
->	<code>\rightarrow</code>	$\rightarrow$	right arrow
-^	<code>\uparrow</code>	$\uparrow$	up arrow
-v	<code>\downarrow</code>	$\downarrow$	down arrow
<->	<code>\leftrightarrow</code>	$\leftrightarrow$	left-right arrow
<-n	<code>\nleftarrow</code>	$\nleftarrow$	not left arrow
->n	<code>\nrightarrow</code>	$\nrightarrow$	not right arrow
-^n	<code>\nuparrow</code>	$\nuparrow$	not up arrow
-vn	<code>\ndownarrow</code>	$\ndownarrow$	not down arrow
<->	<code>\nleftrightarrow</code>	$\nleftrightarrow$	not left-right arrow
-->	<code>\longrightarrow</code>	$\longrightarrow$	
<--	<code>\longleftarrow</code>	$\longleftarrow$	
->	<code>\mapsto</code>	$\mapsto$	

#### 3.5.2 Double:

Table 11: Double Line arrows

key	trans	sym	description
<=	<code>\Leftarrow</code>	$\Leftarrow$	left arrow
=>	<code>\Rightarrow</code>	$\Rightarrow$	right arrow
=^	<code>\Uparrow</code>	$\Uparrow$	up arrow
=v	<code>\Downarrow</code>	$\Downarrow$	down arrow
<=>	<code>\Leftrightarrow</code>	$\Leftrightarrow$	left-right arrow
iff	<code>\Leftrightarrow</code>	$\Leftrightarrow$	left-right arrow
<=n	<code>\nLeftarrow</code>	$\nLeftarrow$	left arrow
=>n	<code>\nRightarrow</code>	$\nRightarrow$	right arrow
<=>n	<code>\nLeftrightarrow</code>	$\nLeftrightarrow$	left-right arrow
iffn	<code>\nLeftrightarrow</code>	$\nLeftrightarrow$	left-right arrow
<==>	<code>\Longleftrightarrow</code>	$\Longleftrightarrow$	left-right arrow
<==	<code>\Longleftarrow</code>	$\Longleftarrow$	left-right arrow
==>	<code>\Longrightarrow</code>	$\Longrightarrow$	left-right arrow

### 3.5.3 Long arrow with top-bottom entries

Table 12: Long arrow Line arrows

key	trans	sym	description
<code>&lt;--</code>	<code>\xleftarrow[ ]{ }</code>	$\xleftarrow{\quad}$	
<code>--&gt;</code>	<code>\xrightarrow[ ]{ }</code>	$\xrightarrow{\quad}$	
<code>==&gt;</code>	<code>\xRightarrow[ ]{ }</code>	$\xRightarrow{\quad}$	mathtools lib required
<code>&lt;===</code>	<code>\xLeftarrow[ ]{ }</code>	$\xLeftarrow{\quad}$	mathtools lib required

## 4 Symbol Modification

### 4.1 Accents (variable decoration?)

Table 13:

key	trans	sym	description
<code>vec</code>	<code>\vec</code>	$\vec{\quad}$	
<code>bar</code>	<code>\bar</code>	$\bar{\quad}$	
<code>hat</code>	<code>\hat</code>	$\hat{\quad}$	
<code>dot</code>	<code>\dot</code>	$\dot{\quad}$	
<code>dot.</code>	<code>\ddot</code>	$\ddot{\quad}$	
<code>dot..</code>	<code>\ddd</code>	$\dddot{\quad}$	
<code>dot...</code>	<code>\dddd</code>	$\dddd{\quad}$	
<code>dag</code>	<code>^\dag</code>	$\dagger$	
<code>dag.</code>	<code>^\ddag</code>	$\ddagger$	
<code>*..</code>	<code>^*</code>	$\ast$	
<code>deg</code>	<code>^\circ</code>	$^\circ$	
<code>tr</code>	<code>^T</code>	$T$	
<code>tr.</code>	<code>^{-T}</code>	$^{-T}$	

## 5 Binary Operation Symbols [0/4]

### 5.1 Simple Arithmetics:

Table 14: Simple Arithmetics operations

key	trans	sym
<code>+-</code>	<code>\pm</code>	$\pm$
<code>-+</code>	<code>\mp</code>	$\mp$
<code>*x</code>	<code>\times</code>	$\times$
<code>::</code>	<code>\div</code>	$\div$
<code>**</code>	<code>\cdot</code>	$\cdot$



## 5.2 Binary Relations:

Table 15:

key	sym	trans	description
=n	$\neq$	<code>\neq</code>	
=.	$\equiv$	<code>\equiv</code>	
=?	$\stackrel{?}{=}$	<code>\stackrel{?}{=}</code>	
=y	$\stackrel{\checkmark}{=}$	<code>\stackrel{\checkmark}{=}</code>	
3=	$\equiv$	<code>\equiv</code>	
=:	$\coloneqq$	<code>\coloneqq</code>	
:=	$\coloneqq$	<code>\coloneqq</code>	
~.	$\sim$	<code>\sim</code>	
~n	$\nsim$	<code>\nsim</code>	
~~	$\approx$	<code>\approx</code>	
<n	$\nless$	<code>\nless</code>	
<.	$\leq$	<code>\leq</code>	
<.n	$\nless$	<code>\nless</code>	
<?	$\stackrel{?}{<}$	<code>\stackrel{?}{&lt;}</code>	
<y	$\stackrel{\checkmark}{<}$	<code>\stackrel{\checkmark}{&lt;}</code>	
<.?	$\stackrel{?}{\leq}$	<code>\stackrel{?}{\leq}</code>	
<.y	$\stackrel{\checkmark}{\leq}$	<code>\stackrel{\checkmark}{\leq}</code>	
«	$\ll$	<code>\ll</code>	
«?	$\stackrel{?}{\ll}$	<code>\stackrel{?}{\ll}</code>	
«y	$\stackrel{\checkmark}{\ll}$	<code>\stackrel{\checkmark}{\ll}</code>	
>n	$\ngtr$	<code>\ngtr</code>	
>.	$\geq$	<code>\geq</code>	
>.n	$\ngeq$	<code>\ngeq</code>	
>?	$\stackrel{?}{>}$	<code>\stackrel{?}{&gt;}</code>	
>y	$\stackrel{\checkmark}{>}$	<code>\stackrel{\checkmark}{&gt;}</code>	
>.?	$\stackrel{?}{\geq}$	<code>\stackrel{?}{\geq}</code>	
>.y	$\stackrel{\checkmark}{\geq}$	<code>\stackrel{\checkmark}{\geq}</code>	
»	$\gg$	<code>\gg</code>	
»?	$\stackrel{?}{\gg}$	<code>\stackrel{?}{\gg}</code>	
»y	$\stackrel{\checkmark}{\gg}$	<code>\stackrel{\checkmark}{\gg}</code>	

### 5.3 Set symbols

Table 16:

key	sym	trans	description
in	$\in$	<code>\in</code>	
in.	$\ni$	<code>\ni</code>	
ni	$\ni$	<code>\ni</code>	
inn	$\notin$	<code>\notin</code>	
0/	$\emptyset$	<code>\emptyset</code>	
nsr	$\mathbb{R}$	<code>\mathbb{R}</code>	
nsc	$\mathbb{C}$	<code>\mathbb{C}</code>	
nsn	$\mathbb{N}$	<code>\mathbb{N}</code>	
nsp	$\mathbb{P}$	<code>\mathbb{P}</code>	
nsz	$\mathbb{Z}$	<code>\mathbb{Z}</code>	
nsi	$\mathbb{I}$	<code>\mathbb{I}</code>	
sub	$\subset$	<code>\subset</code>	
subn	$\subsetneq$	<code>\subsetneq</code>	
sub=	$\subseteq$	<code>\subseteq</code>	
sub=n	$\subsetneq$	<code>\subsetneq</code>	
subn=	$\subsetneq$	<code>\subsetneq</code>	
sup	$\supset$	<code>\supset</code>	
supn	$\supsetneq$	<code>\supsetneq</code>	
sup=	$\supseteq$	<code>\supseteq</code>	
sup=n	$\supsetneq$	<code>\supsetneq</code>	
supn=	$\supsetneq$	<code>\supsetneq</code>	

### 5.4 Logic

Table 17:

key	sym	trans	description
or	$\vee$	<code>\lor</code>	
and	$\wedge$	<code>\land</code>	
not	$\neg$	<code>\neg</code>	
or.	or	<code>\text{ or }</code>	
and.	and	<code>\text{ and }</code>	
not.	not	<code>\text{ not }</code>	

## 6 Functions

### 6.1 Function

Table 18:

key	sym	trans	description
rank	rank	<code>\mathrm{rank}</code>	
arg	arg	<code>\arg</code>	
det	det	<code>\det</code>	
dim	dim	<code>\dim</code>	
exp	exp	<code>\exp</code>	
Im	Im	<code>\mathrm{Im}</code>	
Re	Re	<code>\mathrm{Re}</code>	
ln	ln	<code>\ln</code>	
log	log	<code>\log</code>	
max	max	<code>\max</code>	
min	min	<code>\min</code>	
dim	dim	<code>\dim</code>	
sqrt	$\sqrt{\square}$	<code>\sqrt</code>	
mod	$\square \pmod{\square}$	<code>\pmod</code>	
mod.	$\square \bmod \square$	<code>\mod</code>	
mod..	$\square \bmod \square$	<code>\bmod</code>	

### 6.2 Trigonometry: function

Table 19:

key	sym	trans	key	sym	trans
cos	cos	<code>\cos</code>	cosh	cosh	<code>\cosh</code>
sin	sin	<code>\sin</code>	sinh	sinh	<code>\sinh</code>
tan	tan	<code>\tan</code>	tanh	tanh	<code>\tanh</code>
cot	cot	<code>\cot</code>	coth	coth	<code>\coth</code>
acos	arccos	<code>\arccos</code>	cos.	arccos	<code>\arccos</code>
asin	arcsin	<code>\arcsin</code>	sin.	arcsin	<code>\arcsin</code>
atan	arctan	<code>\arctan</code>	tan.	arctan	<code>\arctan</code>

### 6.3 Iterative-like operation:

Table 20: Integrals, Sums, Products

key	sym	trans	description
il	$\sum_{here}^{here}$	<code>\limits_{ }^{ }{ }</code>	
lim	$\lim$	<code>\lim</code>	
sum	$\sum$	<code>\sum</code>	
prod	$\prod$	<code>\prod</code>	
int	$\int$	<code>\int</code>	
inti	$\iint$	<code>\iint</code>	
intii	$\iiint$	<code>\iiint</code>	
intiii	$\iiint$	<code>\iiint</code>	
into	$\oint$	<code>\oint</code>	
sum.	$\sum_{i=1}^n$	<code>\sum\limits_{i=1}^n{ }</code>	
prod.	$\prod_{i=1}^n$	<code>\prod\limits_{i=1}^n{ }</code>	
int.	$\int_{-\infty}^{-\infty}$	<code>\int\limits_{-\infty}^{-\infty}{ }</code>	
inti.	$\iint_C$	<code>\iint\limits_C{ }</code>	
intii.	$\iiint_C$	<code>\iiint\limits_C{ }</code>	
intiii.	$\iiint_C$	<code>\iiint\limits_C{ }</code>	
into.	$\oint_C$	<code>\oint\limits_C{ }</code>	



## 7 Structural:

### 7.1 Parenthesis Related

Table 21:

key	sym	trans	description
() .	(□)	\left( \right)	
()..	(□ □)	\left( \middle\vert \right)	
[] .	[□]	\left[ \right]	
[]..	[□ □]	\left[ \middle\vert \right]	
[] .c	[□]	\lceil \rceil	
[] .f	[□]	\lfloor \rfloor	
{ } .	{□}	\left\{ \right\}	
{ }..	{□ □}	\left\{ \middle\vert \right\}	
.	□	\left\vert \right\vert	

### 7.2 Texts:

Table 22:

key	sym	trans	description
te	$a + \text{text}$	\text{}	
tr	$a + \mathrm{}$	\mathrm{}	
tb	$a + \mathbf{}$	\mathbf{}	
ti	$a + \mathit{}$	\mathit{}	

### 7.3 Superscripts (power) & Subsripts (lower)

Table 23:

key	sym	trans	key	sym	trans
pp	$\square^\square$	$\sim\{$	11	$\square_\square$	$\_ \{$
p0	$\square^0$	$\sim 0$	10	$\square_0$	$\_ 0$
p1	$\square^1$	$\sim 1$	11	$\square_1$	$\_ 1$
p2	$\square^2$	$\sim 2$	12	$\square_2$	$\_ 2$
p3	$\square^3$	$\sim 3$	13	$\square_3$	$\_ 3$
p4	$\square^4$	$\sim 4$	14	$\square_4$	$\_ 4$
pn	$\square^n$	$\sim n$	l <sub>nn</sub>	$\square_n$	$\_ n$
px	$\square^x$	$\sim x$	li	$\square_i$	$\_ i$
--	$\square_\square$	$\backslash \underset{\square}{\square}$	^^	$\square^\square$	$\backslash \overset{\square}{\square}$
---	$\underbrace{\square}$	$\backslash \underbrace{\square}_{\square}$	^^.	$\overbrace{\square}$	$\backslash \overbrace{\square}^{\square}$
---	$\underline{\square}$	$\backslash \underline{\square}$	^^..	$\overline{\square}$	$\backslash \overline{\square}$

### 7.4 Misc.

Table 24:

key	sym	trans	description
binom	$\binom{\square}{\square}$	$\backslash \text{binom}$	
box	$\boxed{\square}$	$\backslash \text{boxed}$	
can	$\cancel{\square}$	$\backslash \text{cancel}$	requires cancel
&=		$\&=\backslash n\\ \\$	
=&		$\&=\backslash n\\ \\$	

### 7.5 xy Diagram related

Table 25:

key	sym	trans	description
xy		$\backslash \text{xymatrix}\{\backslash n\backslash n\}$	
bu	•	$\backslash \text{bullet}$	
ar		$\backslash \text{ar}$	

## 8 Formatting Table into Elisp

```
def format_table_to_elisp_type6col(headcomment, table):
    print(f";; {headcomment}")
    table = table[1:]
    for line in table:
        key, sym, trans, key1, sym, trans1 = line
        key = repr(key).replace("\\'", "\'").replace("~", "")
        key1 = repr(key1).replace("\\'", "\'").replace("~", "")
        trans = repr(trans).replace("\\'", "\'").replace("~", "")
        trans1 = repr(trans1).replace("\\'", "\'").replace("~", "")

        print(f"({key:<7} [{trans:<17}]) ({key:<7} [{trans:<17}])")

def format_table_to_elisp_type3col_type1(headcomment, table):
    print(f";; {headcomment}")
    table = table[1:]
    for line in table:
        key, trans, sym, description = line
        key = repr(key).replace("\\'", "\'").replace("~", "")
        trans = repr(trans).replace("\\'", "\'").replace("~", "")

        print(f"({key:<8} {trans:<22}) ; {description}")

def format_table_to_elisp_type3col_type2(headcomment, table):
    print(f";; {headcomment}")
    table = table[1:]
    for line in table:
        key, trans, sym, description = line
        key = repr(key).replace("\\'", "\'").replace("~", "")
        trans = repr(trans).replace("\\'", "\'").replace("~", "")

        print(f"({key:<8} {trans:<22}) ; {description}")

format_table_to_elisp_type6col("Greek", tbl1_greek)
format_table_to_elisp_type6col("Matrix", tbl1_matrix)
format_table_to_elisp_type6col("Vector & Hat", tbl1_vec)

format_table_to_elisp_type3col_type2("Expanding Func", tbl2_exec_func)
```

```

format_table_to_elisp_type3col_type1("Symbols-dots", tbl_3_sym_dots)
format_table_to_elisp_type3col_type1("Symbols-geo", tbl_3_sym_geo)
format_table_to_elisp_type3col_type1("Symbols", tbl_3_sym_letter)
format_table_to_elisp_type3col_type1("Symbols spaces", tbl_3_sym_spc)
format_table_to_elisp_type3col_type1("Symbols arrow1", tbl_3_sym_arrow_1)
format_table_to_elisp_type3col_type1("Symbols arrow2", tbl_3_sym_arrow_2)
format_table_to_elisp_type3col_type1("Symbols arrow3", tbl_3_sym_arrow_3)

format_table_to_elisp_type3col_type1("Symbols arrow3", tbl_4_sym_mod_1)

format_table_to_elisp_type3col_type1("Operation: arith", tbl_5_op_arith)
format_table_to_elisp_type3col_type1("Operation: arith", tbl_5_op_bin)
format_table_to_elisp_type3col_type1("Operation: arith", tbl_5_op_set)
format_table_to_elisp_type3col_type1("Operation: arith", tbl_5_op_logic)

format_table_to_elisp_type3col_type1("Func: main", tbl_6_func)
format_table_to_elisp_type6col("Func: Trig", tbl_6_func_trig_6col)
format_table_to_elisp_type3col_type1("Func: iter", tbl_6_func_iter)

format_table_to_elisp_type3col_type1("Structural: Parenthesis", tbl_7_parenthesis)
format_table_to_elisp_type3col_type1("Structural: Text", tbl_7_text)
format_table_to_elisp_type3col_type1("Structural: Text", tbl_7_text)
format_table_to_elisp_type6col("Structural: Sub-sup-scripts", tbl_7_supsubscripts)
format_table_to_elisp_type3col_type1("Structural: misc", tbl_7_misc)
format_table_to_elisp_type3col_type1("Structural: xy", tbl_7_xy)

;; Greek
("a." ["\\alpha" ]) ("a." ["\\alpha" ])
("b." ["\\beta" ]) ("b." ["\\beta" ])
("c." ["\\psi" ]) ("c." ["\\psi" ])
("d." ["\\delta" ]) ("d." ["\\delta" ])
("e." ["\\epsilon" ]) ("e." ["\\epsilon" ])
("f." ["\\phi" ]) ("f." ["\\phi" ])
("g." ["\\gamma" ]) ("g." ["\\gamma" ])
("h." ["\\eta" ]) ("h." ["\\eta" ])
("i." ["\\iota" ]) ("i." ["\\iota" ])
("j." ["\\xi" ]) ("j." ["\\xi" ])
("k." ["\\kappa" ]) ("k." ["\\kappa" ])
("l." ["\\lambda" ]) ("l." ["\\lambda" ])
("m." ["\\mu" ]) ("m." ["\\mu" ])

```

```

("n." ["\\nu" ]) ("n." ["\\nu" ])
("o." ["o" ]) ("o." ["o" ])
("p." ["\\pi" ]) ("p." ["\\pi" ])
("r." ["\\rho" ]) ("r." ["\\rho" ])
("s." ["\\sigma" ]) ("s." ["\\sigma" ])
("t." ["\\tau" ]) ("t." ["\\tau" ])
("th." ["\\theta" ]) ("th." ["\\theta" ])
("u." ["\\upsilon" ]) ("u." ["\\upsilon" ])
("w." ["\\omega" ]) ("w." ["\\omega" ])
("x." ["\\chi" ]) ("x." ["\\chi" ])
("z." ["\\zeta" ]) ("z." ["\\zeta" ])
;; Matrix
("Am" ["\\mathbf{A}" ]) ("Am" ["\\mathbf{A}" ])
("Bm" ["\\mathbf{B}" ]) ("Bm" ["\\mathbf{B}" ])
("Cm" ["\\mathbf{C}" ]) ("Cm" ["\\mathbf{C}" ])
("Dm" ["\\mathbf{D}" ]) ("Dm" ["\\mathbf{D}" ])
("Em" ["\\mathbf{E}" ]) ("Em" ["\\mathbf{E}" ])
("Fm" ["\\mathbf{F}" ]) ("Fm" ["\\mathbf{F}" ])
("Gm" ["\\mathbf{G}" ]) ("Gm" ["\\mathbf{G}" ])
("Hm" ["\\mathbf{H}" ]) ("Hm" ["\\mathbf{H}" ])
("Im" ["\\mathbf{I}" ]) ("Im" ["\\mathbf{I}" ])
("Jm" ["\\mathbf{J}" ]) ("Jm" ["\\mathbf{J}" ])
("Km" ["\\mathbf{K}" ]) ("Km" ["\\mathbf{K}" ])
("Lm" ["\\mathbf{L}" ]) ("Lm" ["\\mathbf{L}" ])
("Mm" ["\\mathbf{M}" ]) ("Mm" ["\\mathbf{M}" ])
("Nm" ["\\mathbf{N}" ]) ("Nm" ["\\mathbf{N}" ])
("Om" ["\\mathbf{O}" ]) ("Om" ["\\mathbf{O}" ])
("Pm" ["\\mathbf{P}" ]) ("Pm" ["\\mathbf{P}" ])
("Qm" ["\\mathbf{Q}" ]) ("Qm" ["\\mathbf{Q}" ])
("Rm" ["\\mathbf{R}" ]) ("Rm" ["\\mathbf{R}" ])
("Sm" ["\\mathbf{S}" ]) ("Sm" ["\\mathbf{S}" ])
("Tm" ["\\mathbf{T}" ]) ("Tm" ["\\mathbf{T}" ])
("Um" ["\\mathbf{U}" ]) ("Um" ["\\mathbf{U}" ])
("Vm" ["\\mathbf{V}" ]) ("Vm" ["\\mathbf{V}" ])
("Wm" ["\\mathbf{W}" ]) ("Wm" ["\\mathbf{W}" ])
("Xm" ["\\mathbf{X}" ]) ("Xm" ["\\mathbf{X}" ])
("Ym" ["\\mathbf{Y}" ]) ("Ym" ["\\mathbf{Y}" ])
("Zm" ["\\mathbf{Z}" ]) ("Zm" ["\\mathbf{Z}" ])
;; Vector & Hat
("av" ["\\vec{a}" ]) ("av" ["\\vec{a}" ])

```

```

("bv"      ["\\vec{b}"      ]) ("bv"      ["\\vec{b}"      ])
("cv"      ["\\vec{c}"      ]) ("cv"      ["\\vec{c}"      ])
("dv"      ["\\vec{d}"      ]) ("dv"      ["\\vec{d}"      ])
("ev"      ["\\vec{e}"      ]) ("ev"      ["\\vec{e}"      ])
("fv"      ["\\vec{f}"      ]) ("fv"      ["\\vec{f}"      ])
("gv"      ["\\vec{g}"      ]) ("gv"      ["\\vec{g}"      ])
("hv"      ["\\vec{h}"      ]) ("hv"      ["\\vec{h}"      ])
("iv"      ["\\vec{i}"      ]) ("iv"      ["\\vec{i}"      ])
("jv"      ["\\vec{j}"      ]) ("jv"      ["\\vec{j}"      ])
("kv"      ["\\vec{k}"      ]) ("kv"      ["\\vec{k}"      ])
("lv"      ["\\vec{l}"      ]) ("lv"      ["\\vec{l}"      ])
("mv"      ["\\vec{m}"      ]) ("mv"      ["\\vec{m}"      ])
("nv"      ["\\vec{n}"      ]) ("nv"      ["\\vec{n}"      ])
("ov"      ["\\vec{o}"      ]) ("ov"      ["\\vec{o}"      ])
("pv"      ["\\vec{p}"      ]) ("pv"      ["\\vec{p}"      ])
("qv"      ["\\vec{q}"      ]) ("qv"      ["\\vec{q}"      ])
("rv"      ["\\vec{r}"      ]) ("rv"      ["\\vec{r}"      ])
("sv"      ["\\vec{s}"      ]) ("sv"      ["\\vec{s}"      ])
("tv"      ["\\vec{t}"      ]) ("tv"      ["\\vec{t}"      ])
("uv"      ["\\vec{u}"      ]) ("uv"      ["\\vec{u}"      ])
("vv"      ["\\vec{v}"      ]) ("vv"      ["\\vec{v}"      ])
("wv"      ["\\vec{w}"      ]) ("wv"      ["\\vec{w}"      ])
("xv"      ["\\vec{x}"      ]) ("xv"      ["\\vec{x}"      ])
("yv"      ["\\vec{y}"      ]) ("yv"      ["\\vec{y}"      ])
("zv"      ["\\vec{z}"      ]) ("zv"      ["\\vec{z}"      ])

;; Expanding Func
("/")      "quail-TeX-fraction"    ) ; fraction on previous
("eq"      "quail-TeX-equation"    ) ; equation environment
("al"      "quail-TeX-aligned"     ) ; aligned environment
("el"      "quail-TeX-endofline"   ) ; end of line

;; Symbols-dots
("..."   "\\dots"                ) ; 3 dots
(".v"      "\\vdots"               ) ; vertical dots
(".d"      "\\ddots"               ) ; diagonale dots
(".l"      "\\ldots"               ) ; low dots

;; Symbols-geo
("perp"    "\\perp"                ) ;
("perpn"   "\\perp"                ) ;
("para"    "\\parallel"            ) ;
("paran"   "\\nparallel"          ) ;

```

```

("ang"      "\\angle"      ) ;
("ang."     "\\measuredangle" ) ;
;; Symbols
("inf"      "\\infty"      ) ;
("ex"       "\\exists"     ) ;
("ex."      "\\nexists"    ) ;
("fa"       "\\forall"     ) ;
("hb"       "\\hbar"       ) ;
("hb."      "\\hslash"     ) ;
("dd"       "\\mathrm{d}"   ) ;
("dd."      "\\partial"    ) ;
("ii"       "\\imath"      ) ;
("jj"       "\\jmath"      ) ;
("nab"      "\\nabla"      ) ;
("cm"       "\\checkmark"  ) ;
;; Symbols spaces
("qu"       "\\quad"       ) ;
("quu"      "\\qquad"      ) ;
;; Symbols arrow1
("<->"      "\\leftarrow"   ) ; left arrow
("<->"      "\\rightarrow"  ) ; right arrow
("<-^"      "\\uparrow"     ) ; up arrow
("<-v"      "\\downarrow"   ) ; down arrow
("<->"      "\\leftrightharpoon" ) ; left-right arrow
("<-n"      "\\nleftarrow"  ) ; not left arrow
("<->n"     "\\nrightarrow" ) ; not right arrow
("<-^n"     "\\nuparrow"    ) ; not up arrow
("<-vn"     "\\ndownarrow"  ) ; not down arrow
("<->"      "\\nleftrightharpoon" ) ; not left-right arrow
("<->"      "\\longrightarrow" ) ;
("<->"      "\\longleftarrow" ) ;
("\\vert ->" "\\mapsto"    ) ;
;; Symbols arrow2
("<="      "\\Leftarrow"   ) ; left arrow
("<="      "\\Rightarrow"   ) ; right arrow
("<="      "\\Uparrow"     ) ; up arrow
("<="      "\\Downarrow"   ) ; down arrow
("<=>"     "\\Leftrightarrow" ) ; left-right arrow
("iff"     "\\Leftrightarrow" ) ; left-right arrow
("<=n"     "\\nLeftarrow"  ) ; left arrow

```

```

( ">"      "\\nRrightarrow"      ) ; right arrow
( "<=>"     "\\nLeftrightarrow"   ) ; left-right arrow
( "iffn"    "\\nLeftrightarrow"   ) ; left-right arrow
( "<==>"    "\\Longlefttrightarrow" ) ; left-right arrow
( "<=="     "\\Longleftarrow"      ) ; left-right arrow
( "==">"    "\\Longrightarrow"    ) ; left-right arrow
;; Symbols arrow3
( "<---"    "\\xleftarrow[ ]{ }"   ) ;
( "--->"   "\\xrightarrow[ ]{ }"   ) ;
( "===>"   "\\xRrightarrow[ ]{ }" ) ; ~mathtools~ lib required
( "<==="    "\\xLeftarrow[ ]{ }"   ) ; ~mathtools~ lib required
;; Symbols arrow3
( "vec"     "\\vec"               ) ;
( "bar"     "\\bar"               ) ;
( "hat"     "\\hat"               ) ;
( "dot"     "\\dot"               ) ;
( "dot."    "\\ddot"              ) ;
( "dot.."   "\\ddd"               ) ;
( "dot..." "\\dddd"              ) ;
( "dag"     "^\\dagger"           ) ;
( "dag."    "^\\ddagger"          ) ;
( "*.."     "^*"                  ) ;
( "deg"     "^\\circ"             ) ;
( "tr"      "^T"                  ) ;
( "tr."     "^{-T}"               ) ;
;; Operation: arith
( "+-"      "\\pm"                ) ;
( "-+"      "\\mp"                ) ;
( "*x"      "\\times"              ) ;
( ":"       "\\div"                ) ;
( "**"       "\\cdot"               ) ;
;; Operation: arith
( "=n"      "$\\neq$"              ) ;
( "=."      "$\\equiv$"            ) ;
( "=?"      "$\\stackrel{?}{=}$"   ) ;
( "=y"      "$\\stackrel{\\checkmark}{=}$" ) ;
( "3="      "$\\equiv$"            ) ;
( "=: "     "$\\coloneqq$"          ) ;
( ":="      "$\\coloneqq$"          ) ;
( "=.="     "$\\sim$"              ) ;

```



```

("=n="      "$\\nsim$"          ) ;
(" "        "$\\approx$"        ) ;
("<n"       "$\\nless$"         ) ;
("<."       "$\\leq$"           ) ;
("<.n"      "$\\nleq$"          ) ;
("<?"       "$\\stackrel{?}{<}" ) ;
("<y"       "$\\stackrel{\\checkmark}{<}" ) ;
("<?."      "$\\stackrel{?}{\\leq}" ) ;
("<.y"      "$\\stackrel{\\checkmark}{\\leq}" ) ;
("<<"       "$\\ll$"            ) ;
("<<?"      "$\\stackrel{?}{\\ll}" ) ;
("<<y"      "$\\stackrel{\\checkmark}{\\ll}" ) ;
(">n"       "$\\ngtr$"          ) ;
(">."       "$\\geq$"           ) ;
(">.n"      "$\\ngeq$"          ) ;
(">?"       "$\\stackrel{?}{>}" ) ;
(">y"       "$\\stackrel{\\checkmark}{>}" ) ;
(">?."      "$\\stackrel{?}{\\geq}" ) ;
(">.y"      "$\\stackrel{\\checkmark}{\\geq}" ) ;
(">>"       "$\\gg$"            ) ;
(">>?"      "$\\stackrel{?}{\\gg}" ) ;
(">>y"      "$\\stackrel{\\checkmark}{\\gg}" ) ;
;; Operation: arith
("in"       "$\\in$"            ) ;
("in."      "$\\ni$"            ) ;
("ni"       "$\\ni$"            ) ;
("inn"      "$\\notin$"         ) ;
("0/"       "$\\emptyset$"       ) ;
("nsr"      "$\\mathbb{R}$"      ) ;
("nsc"      "$\\mathbb{C}$"      ) ;
("nsn"      "$\\mathbb{N}$"      ) ;
("nsp"      "$\\mathbb{P}$"      ) ;
("nsz"      "$\\mathbb{Z}$"      ) ;
("nsi"      "$\\mathbb{I}$"      ) ;
("sub"      "$\\subset$"         ) ;
("subn"     "$\\nsubseteq$"       ) ;
("sub="     "$\\subseteq$"       ) ;
("sub=n"    "$\\nsubseteq$"       ) ;
("subn="    "$\\nsubseteq$"       ) ;
("sup"      "$\\supset$"         ) ;

```

```

("supn"      "$\\nsupseteq$"      ) ;
("sup="      "$\\supseteq$"      ) ;
("sup=n"     "$\\nsupseteq$"     ) ;
("supn="     "$\\nsupseteq$"     ) ;
;; Operation: arith
("or"        "$\\lor$"           ) ;
("and"       "$\\land$"          ) ;
("not"       "$\\neg$"           ) ;
("or."       "$\\text{ or }$"     ) ;
("and."      "$\\text{ and }$"    ) ;
("not."      "$\\text{ not }$"    ) ;
;; Func: main
("rank"      "$\\mathrm{rank}$"   ) ;
("arg"       "$\\arg$"            ) ;
("det"       "$\\det$"            ) ;
("dim"       "$\\dim$"            ) ;
("exp"       "$\\exp$"            ) ;
("Im"        "$\\mathrm{Im}$"     ) ;
("Re"        "$\\mathrm{Re}$"     ) ;
("ln"        "$\\ln$"            ) ;
("log"       "$\\log$"            ) ;
("max"       "$\\max$"            ) ;
("min"       "$\\min$"            ) ;
("dim"       "$\\dim$"            ) ;
("sqrt"      "$\\sqrt[\\Box]{\\Box}$" ) ;
("mod"       "$\\Box \\pmod \\Box$" ) ;
("mod."      "$\\Box \\mod \\Box$" ) ;
("mod.."     "$\\Box \\bmod \\Box$" ) ;
;; Func: Trig
("cos"       ["\\cos"             ]) ("cos"       ["\\cos"             ])
("sin"       ["\\sin"             ]) ("sin"       ["\\sin"             ])
("tan"       ["\\tan"             ]) ("tan"       ["\\tan"             ])
("cot"       ["\\cot"             ]) ("cot"       ["\\cot"             ])
("acos"      ["\\arccos"          ]) ("acos"      ["\\arccos"          ])
("asin"      ["\\arcsin"          ]) ("asin"      ["\\arcsin"          ])
("atan"      ["\\arctan"          ]) ("atan"      ["\\arctan"          ])
;; Func: iter
("il"        "$\\sum\\limits_{ here }^{here}$" ) ;
("lim"       "$\\lim$"            ) ;
("sum"       "$\\sum$"            ) ;

```

```

("prod"      "$\\prod$"                ) ;
("int"       "$\\int$"                 ) ;
("inti"      "$\\iint$"                ) ;
("intii"     "$\\iiint$"               ) ;
("intiii"    "$\\iiint$"               ) ;
("into"      "$\\oint$"                ) ;
("sum."      "$\\sum\\limits_{ i=1 }^{ n }$" ) ;
("prod."     "$\\prod\\limits_{ i=1 }^{ n }$" ) ;
("int."      "$\\int\\limits_{ -\\infty }^{ -\\infty }$" ) ;
("inti."     "$\\iint\\limits_{ C }$" ) ;
("intii."    "$\\iiint\\limits_{ C }$" ) ;
("intiii."   "$\\iiint\\limits_{ C }$" ) ;
("into."     "$\\oint\\limits_{ C }$" ) ;
;; Structural: Parenthesis
("(".."      "$\\left( \\Box \\right)$" ) ;
("(".."      "$\\left( \\Box \\middle\\vert \\Box \\right)$" ) ;
("[]."       "$\\left[ \\Box \\right)$" ) ;
("[]."       "$\\left[ \\Box \\middle\\vert \\Box \\right)$" ) ;
("[].c"      "$\\lceil \\Box \\rceil$" ) ;
("[].f"      "$\\lfloor \\Box \\rfloor$" ) ;
("{}.."      "$\\left\\{ \\Box \\right\\}$" ) ;
("{}.."      "$\\left\\{ \\Box \\middle\\vert \\Box \\right\\}$" ) ;
("\\vert\\vert.." "$\\left\\vert \\Box \\right\\vert$" ) ;
;; Structural: Text
("te"       "$a + \\text{text}$" ) ;
("tr"       "$a + \\mathrm{mathrm}$" ) ;
("tb"       "$a + \\mathbf{mathbf}$" ) ;
("ti"       "$a + \\mathit{mathit}$" ) ;
;; Structural: Text
("te"       "$a + \\text{text}$" ) ;
("tr"       "$a + \\mathrm{mathrm}$" ) ;
("tb"       "$a + \\mathbf{mathbf}$" ) ;
("ti"       "$a + \\mathit{mathit}$" ) ;
;; Structural: Sub-sup-scripts
("pp"       ["^{ " ] ) ("pp"       ["^{ " ] )
("p0"       ["^0 " ] ) ("p0"       ["^0 " ] )
("p1"       ["^1 " ] ) ("p1"       ["^1 " ] )
("p2"       ["^2 " ] ) ("p2"       ["^2 " ] )
("p3"       ["^3 " ] ) ("p3"       ["^3 " ] )
("p4"       ["^4 " ] ) ("p4"       ["^4 " ] )

```

```

("pn"      ["^n"          ]) ("pn"      ["^n"          ])
("px"      ["^x"          ]) ("px"      ["^x"          ])
("__"      ["\\underset{ }{ }"]) ("__"      ["\\underset{ }{ }"])
("_. ."    ["\\underbrace{ }_{ }"]) ("_. ."    ["\\underbrace{ }_{ }"])
("_. ."    ["\\underline{ }" ]) ("_. ."    ["\\underline{ }" ])
;; Structural: misc
("binom"   "$\\binom{\\Box}{\\Box}$") ;
("box"     "$\\boxed{\\Box}$"      ) ;
("can"     "$\\cancel{\\Box}$"     ) ; requires ~cancel~
("&="      ""                     ) ;
("=&"      ""                     ) ;
;; Structural: xy
("xy"      ""                     ) ;
("bu"      "$\\bullet$"           ) ;
("ar"      ""                     ) ;

```