${\scriptstyle \rhd} \ \mathsf{Size}\text{-}\mathsf{adaptive} \ \mathsf{math:} \ \backslash \mathsf{leftX} \ \ldots \backslash \mathsf{rightX}$

	(x)	parantheses
	[x]	brackets
	x	absolute value
	$ x ^2$	absolute value squared
{}	[x, y]	commutator
	$\langle x \rangle$	mean value

⊳ Fixed-size math (for quickly changing from adaptive style)

	(x)	big parantheses
	(x)	Big parantheses
	$\begin{bmatrix} x \end{bmatrix}$	big brackets
	$\lfloor x \rfloor$	Big brackets
	x	big absolute value
	x	Big absolute value
	$ x ^2$	big absolute value squared
	$ x ^2$	Big absolute value squared
{}	[x,y]	big commutator
{}	x,y	Big commutator
	$\langle x \rangle$	big mean value
	$\langle x \rangle$	Big mean value

▶ Braket notation

	$\langle x $	bra
	$ x\rangle$	ket
{}	$\langle x y\rangle$	scalar product
{}	$ x\rangle\langle y $	ket-bra operator

 $\langle x|y|z\rangle$ \braketop{..}{..}{..} matrix element $\mbox{\sc smallbraketop}\{..\}\{..\}\{..\}$ $\langle x|y|z\rangle$ small matrix element \deltaf{..} $\delta(x)$ delta function \thetaf{..} $\theta(x)$ theta function \expf{..} exponential function $\exp(x)$ \ef{..} e^x exponential function \Refn{..} Re(x)real part, function form \Imfn{..} Im(x)imaginary part, function form \Re Re real part \Im Imimaginary part ▶ Named states \ketPsi $|\Psi\rangle$ $|\psi\rangle$ \ketpsi \ketphi $|\varphi\rangle$ \ketup $|\uparrow\rangle$ spin up spin down \ketdn $|\downarrow\rangle$ $|0\rangle$ \ketzero \ketone $|1\rangle$ \ketg $|g\rangle$ ground state excited state \kete $|e\rangle$ \vac |vac> vacuum ▶ Pauli matrices σ^x \sx σ^y \sy

\sz	σ^z	
\splus	σ^+	
\sminus	σ^{-}	
> Vectors		
\vecr	\mathbf{r}	
\vecrone	\mathbf{r}_1	
\vecrtwo	$\mathbf{r_2}$	
\vecrn	$\mathbf{r_{N}}$	
\vecri	$\mathbf{r_{i}}$	
\vecrj	$\mathbf{r_{j}}$	
\vecR	\mathbf{R}	
\vecx	X	
\vecy	\mathbf{y}	
\vecz	${f z}$	
\vecxi	$\mathbf{x_i}$	
\vecxj	$\mathbf{x_{j}}$	
\veck	k	
\vecq	\mathbf{q}	
\vecp	p	
\vecd	d	
\vecmu	μ	
\vecsigma	σ	
Differentiation		
	$\frac{\partial}{\partial x}$	partial differentiation
\laplace	$ abla^2$	laplace operator

⊳ Integration

	$\int dx$	integral
{}{}	$\int\limits_{x}^{y}\mathrm{d}z$	integral with boundaries
{}	$\int \frac{\mathrm{d}x}{y}$	integral with fraction
\intvol	$\int\!\mathrm{d}^3r$	integral over r space
\intvolp	$\int\!\mathrm{d}^3r'$	integral over r' space
\intvold	$\int \! \mathrm{d}^3 r \int \! \mathrm{d}^3 r'$	double integral over space
\intk	$\int \! \mathrm{d}^3 k$	integral over k space
\intkp	$\int \! \mathrm{d}^3 k'$	integral over k' space
\intkn	$\int \frac{\mathrm{d}^3 k}{(2\pi)^3}$	normalized integral over k space
\intkpn	$\int \frac{\mathrm{d}^3 k'}{(2\pi)^3}$	normalized integral over k' space

⊳ Special symbols

\hc	h.c.	hermitian conjugate
\hamil	Ĥ	Hamilton operator
\hastobe	<u>!</u>	has to be
\eqhat	_	corresponds to, is equivalent
\id	1	identity matrix
\const	const.	hermitian conjugate
\goesto	\longrightarrow	maps to, asymptotically goes to

⊳ Second quantization

\aop	a	annihilation operator a
\aopd	a^{\dagger}	creation operator a
\bop	b	annihilation operator b
\bopd	b^{\dagger}	creation operator b
\cop	c	annihilation operator c
\copd	c^{\dagger}	creation operator c

\nop	n	number operator
\psiop	ψ	field operator psi
\psiopd	ψ^\dagger	creation operator psi
\PsiOp	Ψ	field operator Psi
\PsiOpd	Ψ^\dagger	creation operator Psi

▷ Differences

\Dx	Δx
\Dy	Δy
\Dt	Δt

⊳ Trigonometry

\asin	asin	
\acos	acos	
\atan	atar	

⊳ Figures

<pre>\igopt(2 arguments)</pre>	options, filename
\ig(2 arguments)	width in units of textwidth, filename
\figopt(4 arguments)	width, filename, caption, placement (h, t, ht)
\fig(3 arguments)	width, filename, caption
\doublefigopt(8 arguments)	w1,f1,c1,w2,f2,c2,main caption, placement
\doublefig(7 arguments)	w1, f1, c1, w2, f2, c2, main caption