The ShorTeX package

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Abstract

The purpose of the ShorTeX (meta)package is to make the process of typesetting typical mathematical documents in LaTeX more efficient, and the resulting code easier to read. It achieves this by (1) providing an extensive, internally consistent, and easy to learn set of macro shorthands and custom commands, and (2) incorporating a set of packages that are dedicated to reducing manual coding effort.

Contents

1 Usage and package options

Put a copy of `shortex.sty` in the folder alongside your other document files, and include ShorTeX in the document by adding `\usepackage{shortex}` to the preamble. **Do not install ShorTeX system-wide;** this package has not yet reached a stable version 1.0, and we are updating things regularly without any guarantee of backwards compatibility. **You must compile your document 4 times when using ShorTeX** to ensure that equation numbers and references update properly.

ShorTeX will include and configure many common packages for you (e.g., `graphicx`, `subcaption`, `hyperref`, `algorithm`, `algpseudocode`, `amsmath`, among others), so you do not need to explicitly include and set these up yourself. If you are writing a document that must use a specific style file (e.g., for a conference or journal) that itself includes some of these packages, we recommend editing those style files to remove the package imports.

The ShorTeX package has a few options:

`manualnumbering` Do not include `autonum.sty`. This disables automatic equation numbering.

`blackhypersetup` Switch hyperlinks, citations, references, etc. to be typeset in black font. The default is dark blue.

`draft` Enable `graphicx` draft mode (with placeholder figures).

2 Shorthands for existing commands

2.1 Environments

LaTeX documents often includes a lot of verbose code related to creating environments (`\begin{blah}...\end{blah}`). ShorTeX provides a set of shortened macros for common environments. Note that all theorem-like environments (theorem, lemma, proposition, etc.) are numbered by default; unnumbered versions can be obtained by appending a `u`. For example, `\bthmu...\ethmu` creates an unnumbered theorem environment, while `\blemu...\elemu` creates an unnumbered lemma environment.

Environment	Syntax
abstract	`\babs...\eabs`
itemize	`\bitem...\eitem`
enumerate	`\benum...\eenum`
description	`\bdesc...\edesc`
algorithm	`\balg...\ealg`
algorithmic	`\balgc...\ealgc`
table	`\btab...\etab`
subtable	`\bsubtab...\esubtab`
tabular	`\btabr...\etabr`
figure	`\bfig...\efig`
figure*	`\bfigs...\efigs`
subfigure	`\bsubfig...\esubfig`
center	`\bcent...\ecent`
align	`\[...\]`
inline math	`$...$`
Note: These are numbered theorem-like environments. For unnumbered, append a `u`*: e.g.,* `bthmu...ethmu`.	
theorem	`\bthm...\ethm`
lemma	`\blem...\elem`
proposition	`\bprop...\eprop`
corollary	`\bcor...\ecor`
conjecture	`\bconj...\econj`
definition	`\bdef...\edef`
assumption	`\bassump...\eassump`
example	`\bexa...\eexa`
remark	`\brmk...\ermk`
fact	`\bfact...\efact`
exercise	`\bexer...\eexer`
proof	`\bprf...\eprf`
proofof	`\bprfof{\cref{theorem_label}}...\eprfof`
matrix	`\bmat...\emat`
bmatrix	`\bbmat...\ebmat`
pmatrix	`\bpmat...\epmat`

2.2 Delimiters

Mathematics in LaTeX often includes quite a few delimiters (parentheses, brackets, curly brackets, etc.). A very common usage of these involves the `\left...\right` commands for automatic sizing. One can also use `\bigl...\bigr`, `\Bigl...\Bigr`, `\biggl...\biggr`, `\Biggl...\Biggr` to control sizing manually. ShorTeX cre-

ates shorthands for these.

Description	Syntax
automatic	`\lt...\rt`
big	`\lb...\rb`
Big	`\lB...\rB`
bigg	`\lbg...\rbg`
Bigg	`\lBg...\rBg`

These can be applied to all the usual delimiter characters. The following tables demonstrate usage for automatically sized delimiters.

Description	Example	Text style	Display style
parentheses	`\lt(\frac{x}{y}\rt)`	$\left(\frac{x}{y}\right)$	$\left(\frac{x}{y}\right)$
curly brackets	`\lt\{\frac{x}{y}\rt\}`	$\left\{\frac{x}{y}\right\}$	$\left\{\frac{x}{y}\right\}$
square brackets	`\lt[frac{x}{y}\rt]`	$\left[\frac{x}{y}\right]$	$\left[\frac{x}{y}\right]$
pipes	`\lt|frac{x}{y}\rt|`	$\left\|\frac{x}{y}\right\|$	$\left\|\frac{x}{y}\right\|$
double pipes	`\lt\\|frac{x}{y}\rt\\|`	$\left\|\frac{x}{y}\right\|$	$\left\|\frac{x}{y}\right\|$
angle brackets	`\lt<frac{x}{y}\rt>`	$\left\langle\frac{x}{y}\right\rangle$	$\left\langle\frac{x}{y}\right\rangle$

2.3 Font styles and accents

Applying accents (e.g., hats $\widehat{a}$, tildes $\widetilde{a}$, bars $\overline{a}$) and changing fonts (e.g., double-stroke $\mathbb{A}$, caligraphic $\mathcal{A}$, and bold $\boldsymbol{A}$) is quite cumbersome in standard LaTeX. For example, the code to make a tilde caligraphic A, $\widetilde{\mathcal{A}}$ is `\widetilde{\mathcal{A}}`. By itself that code is not too bad, but many such characters in a large mathematical expression results in unreadable code.

ShorTeX defines an efficient syntax for changing fonts and applying accents to characters. The syntax takes the form `\f[modifiers]character`, where `modifiers` is a set of single characters that represent font/accent modifications to `character`. For example, the code for tilde caligraphic A is `\f[tc]A` where `t` represents "tilde," `c` represents "caligraphic," and `A` is the character to typeset.

Note: modifiers are applied in the reverse of the order in which they appear; the modifier furthest to the right is applied first. This matches the order that the corresponding commands would appear in TeX code.

Style/Accent	Modifier	Example	Typeset Example
caligraphic (`mathcal`)	`c`	`\f[c]A`	$\mathcal{A}$
bold (`mathbf`)	`k`	`\f[k]A`	$\boldsymbol{A}$
doublestroke (`mathbb`)	`d`	`\f[d]A`	$\mathbb{A}$
hat (`widehat`)	`h`	`\f[h]A`	$\widehat{A}$
tilde (`widetilde`)	`t`	`\f[t]A`	$\widetilde{A}$
bar (`widebar`)	`b`	`\f[b]A`	$\overline{A}$

These style modifiers can be combined; the underlying code is flexible enough that it will happily produce a wide variety of combinations, including those that aren't very sensible.

Style/Accent	Modifier	Example	Typeset Example
caligraphic tilde	`ct`	`\f[ct]A`	$\widetilde{\mathcal{A}}$
bold hat	`kh`	`\f[kh]A`	$\widehat{\boldsymbol{A}}$
hat tilde	`ht`	`\f[ht]A`	$\widetilde{\widehat{A}}$
tilde hat	`th`	`\f[th]A`	$\widehat{\widetilde{A}}$

We can avoid typing `[]` for commonly used patterns by parsing the font style string in advance. For example, if we use "bold hat" symbols frequently, we might want to use commands like `\fkh...` instead of `\f[kh]...`. We can accomplish this using the `\parsefontstylestrings` command, with syntax

```
\parsefontstylestrings{{<fstr1>}{<fstr2}...}{<alphabet>}
```

For example, to define "bold hat" and "caligraphic hat" styles for the characters A, B, C, and D, we would use the command

```
\parsefontstylestrings{{kh}{ch}}{ABCD}
```

and then in the LaTeX document, use the commands `\fkhA \fkhB \fkhC \fkhD` and `\fchA \fchB \fchC \fchD` to obtain the following symbols:

$$\widehat{\boldsymbol{A}}\widehat{\boldsymbol{B}}\widehat{\boldsymbol{C}}\widehat{\boldsymbol{D}}\widehat{\mathcal{A}}\widehat{\mathcal{B}}\widehat{\mathcal{C}}\widehat{\mathcal{D}}$$

As another example, for "bold hat" applied to α, β, and γ, we would use the syntax

```
\parsefontstylestrings{{kh}}{\alpha\beta\gamma}
```

and then in the LaTeX document, use the commands `\fkhalpha \fkhbeta \fkhgamma` to obtain the following symbols:

$$\widehat{\boldsymbol{\alpha}}\widehat{\boldsymbol{\beta}}\widehat{\boldsymbol{\gamma}}$$

For convenience we also provide a few common alphabets of symbols for use in the `\parsefontstylestrings` command. Note that not every Greek character has an uppercase version (in cases where it is identical to its Roman counterpart).

Syntax	Characters
`\lowercaseRoman`	abcdefghijklmnopqrstuvwxyz
`\uppercaseRoman`	ABCDEFGHIJKLMNOPQRSTUVWXYZ
`\lowercaseGreek`	alpha,beta,gamma,delta,epsilon,zeta,eta,theta iota,kappa,lambda,mu,nu,xi,omicron,pi,rho sigma,tau,upsilon,phi,chi,psi,omega varepsilon,vartheta,varkappa,varpi,varrho,varsigma,varphi
`\uppercaseGreek`	Gamma,Delta,Theta,Lambda,Xi,Pi,Sigma Upsilon,Phi,Psi,Omega

2.4 Greek characters and variants

ShorTeX defines a number of shorthands for Greek characters and variants.

Letter	Syntax	Symbol
epsilon	`\eps`	ϵ
upsilon	`\ups`	υ
variant epsilon	`\veps`	ε
variant theta	`\vtheta`	ϑ
variant pi	`\vpi`	ϖ
variant rho	`\vrho`	ϱ
variant sigma	`\vsigma`	ς
variant phi	`\vphi`	φ
variant kappa	`\vkappa`	$\varkappa$

2.5 Referencing figures, equations, tables, etc.

ShorTeX includes the `cleveref` package, which simplifies the process of typesetting references. Use the `\cref` command (or `\Cref` at the beginning of a sentence) to automatically typeset the names of the objects you reference (including properly handling multiple references). For example, if `\label{fig:first}` is applied to the first figure in the document,

```
In \cref{fig:first}, you can see...
```

would typeset as "In Fig. 1, you can see..." Similarly, if `\label{thm:first}` references a theorem and `\label{second_result}` references a lemma,

```
\cref{thm:first,lem:second} show that...
```

will typeset as "Theorem 1 and Lemma 2 show that..." This works for many different reference types (Figure, Algorithm, Equation, Table, etc), and can be extended if needed. See the `cleveref` documentation at https://ctan.org/pkg/cleveref?lang=en and the homepage at https://www.dr-qubit.org/cleveref.html for more information.

2.6 Automatic equation numbers

ShorTeX includes the `autonum` package, which simplifies the process of equation numbering. Typically when you typeset equations, you have to choose between `$...$`, `$$...$$`, `\begin{align}...\end{align}`, `\begin{aligned}...\end{aligned}`, `\begin{equation}...\end{equation}`, not to mention starred versions of those environments and `\nonumber`/`\notag` commands, depending on whether/where you want equation numbers,

The `autonum` package automatically decides which equations to provide numbers based on *which equations you reference*. So when using ShorTeX, you only need two commands for math mode: single dollar signs `$...$` for inline math, and `align` environments (redefined in ShorTeX to be `\[...\]`) for display math.[1]

For example, if you create the following display math,

```
\[
   a+b = c \label{eq:the_equation}
\]
```

then if you use the command `\cref{eq:the_equation}` somewhere in the document, that equation will automatically be assigned a number. If not, it won't get a number. See the `autonum` package documentation https://ctan.org/pkg/autonum?lang=en for more information.

3 Custom macros

3.1 Shrinking whitespace in math

The command `\squish{<frac>}` in math mode enables you to shrink whitespace in mathematics, where `<frac>` represents the fraction of whitespace reduction. Below, the first line is regularly spaced, the second line has `\squish{0.5}`, and the third has `\squish{0.0}`.

$$\sqrt{\frac{1^2}{0.111222}(0.111222 \times 1.111163 + 0.066987^2 \times 0.111222) - 1} = \sqrt{0.111222}$$
$$\sqrt{\frac{1^2}{0.111222}(0.111222\times 1.111163 + 0.066987^2 \times 0.111222) - 1} = \sqrt{0.111222}$$
$$\sqrt{\frac{1^2}{0.111222}(0.111222\times 1.111163+0.066987^2\times 0.111222)-1} = \sqrt{0.111222}$$

The code for `\squish` was taken from https://tex.stackexchange.com/questions/467942/how-to-squeeze-a-long-equation.

[1] There are differences between how `align` and other math display environments typeset equations. I have not ever encountered a case where it mattered much. If you are very picky about typesetting, note that ShorTeX does not *disable* any functionality, so you can use other environments anywhere you feel it is necessary.

3.2 Wide bar

ShorTeX provides the `\widebar` command to typeset a wide bar accent on top of a character (similar to the usual `\widehat` and `\widetilde` commands). Compare to the usual `\bar` and `\overline` commands:

`widebar`: $\overline{A}$ `overline`: $\overline{A}$ `bar`: $\bar{A}$

The code for `\widebar` was taken from https://tex.stackexchange.com/questions/16337/can-i-get-a-widebar-without-using-the-mathabx-package.

3.3 Commenting

ShorTeX defines three types of comments that can be used (*remarks*, *problems*, and *highlights*), and provides an inline and margin style for the former two. This is a lightweight alternative to some more common todo packages (e.g., `todonotes`).

Comment Type	Syntax
remark	`\RMK{Example remark}`
margin remark	`\mRMK{Example margin remark}`
problem	`\PRB{Example problem}`
margin problem	`\mPRB{Example margin problem}`
highlight	`\HLT{Some rough text}`

Here is an example of how these look in a typical paragraph:

Lorem ipsum dolor sit amet **(!)** Here is an inline remark, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation **(!!) Here is an inline problem** ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in [(1)] voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat [((2))] cupidatat non proident, sunt. **(⋆)** Here is a highlighted part of the text. sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis

(1) Here is a margin remark

((2)) **Here is a margin problem**

You can also disable all comments to see a clean version of the current document using the `\suppresscomments` command. This command will blank out all `\(m)RMK` and `\(m)PRB` text, and render all `\HLT` text normally.

3.4 Sets and set operations

Name	Syntax	Symbol
reals	`\reals`	$\mathbb{R}$
extended reals	`\extreals`	$\overline{\mathbb{R}}$
rationals	`\rats`	$\mathbb{Q}$
integers	`\ints`	$\mathbb{Z}$
natural numbers	`\nats`	$\mathbb{N}$
complex numbers	`\comps`	$\mathbb{C}$
measures	`\measures`	$\mathcal{M}$
probability measures	`\pmeasures`	$\mathcal{M}_1$
(big) intersection	`\intersect`, `\Intersect`	$\cap$, $\bigcap$
(big) union	`\union`, `\Union`	$\cup$, $\bigcup$
(big) disjoint union	`\djunion`, `\djUnion`	$\sqcup$, $\bigsqcup$
volume	`\vol`	vol
diameter	`\diam`	diam
boundary	`\boundary`	∂
closure	`\closure`	cl
span	`\spann`	span
cone	`\cone`	cone
convex hull	`\conv`	conv

3.5 Linear algebra

Name	Syntax	Symbol
trace	`\tr A`	$\operatorname{tr} A$
rank	`\rank A`	$\operatorname{rank} A$
transpose	`A\T`	$A^\top$
inverse transpose	`A\nT`	$A^{-\top}$
diagonal	`\diag A`	$\operatorname{diag} A$
adjoint	`A\adj`	$A^\dagger$
spectrum	`\spec A`	$\sigma\, A$
kronecker product	`A\kron B`	$A \otimes B$

3.6 Calculus

Name	Syntax	Symbol
differential symbol	`\dee x`	$\mathrm{d}x$
gradient symbol	`\grad f`	∇f
derivative	`\der{x}{y}`	$\frac{\mathrm{d}x}{\mathrm{d}y}$
double derivative	`\dder{x}{y}`	$\frac{\mathrm{d}^2x}{\mathrm{d}y^2}$
derivative w.r.t.	`\derwrt{y}`	$\frac{\mathrm{d}}{\mathrm{d}y}$
partial derivative	`\pder{x}{y}`	$\frac{\partial x}{\partial y}$
partial double derivative	`\pdder{x}{y}`	$\frac{\partial^2 x}{\partial y^2}$
i^{th} partial derivative	`\pderi{x}{y}{i}`	$\frac{\partial^i x}{\partial y^i}$
partial derivative w.r.t.	`\pderwrt{y}`	$\frac{\partial}{\partial y}$
Hessian	`\hes{a}{x}{y}`	$\frac{\partial^2 a}{\partial x \partial y}$

3.7 General mathematics

Name	Syntax	Symbol
argmax	`\argmax_{x\in \reals}`	$\arg\max_{x\in\mathbb{R}}$
argmin	`\argmin_{x\in \reals}`	$\arg\min_{x\in\mathbb{R}}$
esssup	`\esssup_{x\in \reals}`	$\operatorname{ess\,sup}_{x\in\mathbb{R}}$
essinf	`\essinf_{x\in \reals}`	$\operatorname{ess\,inf}_{x\in\mathbb{R}}$
indicator	`\ind[x=3]`	$\mathbb{1}[x=3]$
sign	`\sgn x`	$\operatorname{sgn} x$
scientific notation	`\scin{3}{5}`	3×10^5
such that	`\st`	$:$
given	`\given`	$\mid$
defined as	`\defas`	$:=$
defines	`\defines`	$=:$
half	`\half`	$1/2$
third	`\third`	$1/3$
quarter	`\quarter`	$1/4$

3.8 Common words and names with accents

Syntax	Symbol
`\cadlag`	càdlàg
`\Frechet`	Fréchet
`\Gronwall`	Grönwall
`\Holder`	Hölder
`\Ito`	Itô
`\Levy`	Lévy
`\Matern`	Matérn
`\Nystrom`	Nyström
`\Renyi`	Rényi
`\Schatten`	Schätten

3.9 Probability and statistics

Name	Syntax	Symbol
i.i.d.	`\iid`	i.i.d.
almost sure	`\as`	a.s.
almost everywhere	`\aev`	a.e.
convergence almost surely	`\convas`	$\overset{a.s.}{\to}$
convergence in probability	`\convp`	$\overset{p}{\to}$
convergence in distribution	`\convd`	$\overset{d}{\to}$
equality in distribution	`\eqd`	$\overset{d}{=}$
equality almost surely	`\eqas`	$\overset{a.s.}{=}$
probability	`\pr`	$\mathbb{P}$
expectation	`\ex`	$\mathbb{E}$
variance	`\var`	Var
covariance	`\cov`	Cov
correlation	`\cor`	Corr
support	`\supp`	supp
distributed as	`\dist`	$\sim$
distributed i.i.d.	`\distiid`	$\overset{\text{iid}}{\sim}$
distributed independently	`\distind`	$\overset{\text{ind}}{\sim}$
independent	`\indep`	$\perp\!\!\!\perp$
Entropy	`\ent{q}`	$\mathcal{H}(q)$
KL divergence	`\kl{q}{p}`, `\kl[a]{q}{p}`	$\mathrm{D}_{\mathrm{KL}}(q\|\|p)$, $\mathrm{D}^{\mathrm{a}}_{\mathrm{KL}}(q\|\|p)$
Hellinger distance	`\hell{q}{p}`, `\hell[a]{q}{p}`	$\mathrm{D}_{\mathrm{H}}(q,p)$, $\mathrm{D}^{\mathrm{a}}_{\mathrm{H}}(q,p)$
Total variation distance	`\tvd{q}{p}`, `\tvd[a]{q}{p}`	$\mathrm{D}_{\mathrm{TV}}(q,p)$, $\mathrm{D}^{\mathrm{a}}_{\mathrm{TV}}(q,p)$

Name	Syntax	Symbol
Bernoulli	`\distBern`	Bern
beta	`\distBeta`	Beta
beta prime	`\distBetaPrime`	Beta'
binomial	`\distBinom`	Binom
categorical	`\distCat`	Categorical
Cauchy	`\distCauchy`	Cauchy
chi-squared	`\distChiSq`	χ^2
Dirichlet	`\distDir`	Dir
exponential	`\distExp`	Exp
gamma	`\distGam`	Gam
inverse gamma	`\distInvGam`	InvGam
geometric	`\distGeom`	Geom
Gumbel	`\distGum`	Gumbel
generalized extreme value	`\distGEV`	GEV
Laplace	`\distLap`	Lap
multinomial	`\distMulti`	Multi
normal	`\distNorm`	$\mathcal{N}$
Poisson	`\distPoiss`	Poiss
student-t	`\distT`	$\mathcal{T}$
uniform	`\distUnif`	Unif
von Mises-Fisher	`\distVMF`	vMF
Wishart	`\distWish`	$\mathcal{W}$
inverse Wishart	`\distInvWish`	$\mathcal{IW}$
Bernoulli process	`\distBeP`	BeP
beta process	`\distBP`	BP
beta prime process	`\distBPP`	BPP
Dirichlet process	`\distDP`	DP
Chinese restauarant process	`\distCRP`	CRP
completely random measure	`\distCRM`	CRM
normalized completely random measure	`\distNCRM`	NCRM
gamma process	`\distGamP`	ΓP
normalized gamma process	`\distNGamP`	NΓP
Gaussian process	`\distGP`	GP
Pitman-Yor process	`\distPYP`	PY
Poisson process	`\distPP`	PP

3.10 Vector spaces and operators

Description	Syntax	Symbol
Norm	`\norm{\frac{x}{y}}`	$\left\|\frac{x}{y}\right\|$
Norm with subscript	`\normsub*{\frac{x}{y}}{2}`	$\left\|\frac{x}{y}\right\|_2$
Inner product	`\inner{\frac{x}{y}}{\frac{y}{z}}`	$\left\langle\frac{x}{y}, \frac{y}{z}\right\rangle$
Inner prod with subscript	`\innersub*{\frac{x}{y}}{z}{2}`	$\left\langle\frac{x}{y}, z\right\rangle_2$
L^p space	`\Lp{2}`	L^2
L^p space for specified measure	`\Lpm{2}{\mu}`	$L^2(\mu)$
	`\Lpm*{2}{\mu}`	$L^2(\mu)$
	`\Lpm[\Big]{2}{\mu}`	$L^2\Big(\mu\Big)$
L^p norm	`\Lpnorm{\Gamma}{2}`	$\|\Gamma\|_{L^2}$
	`\Lpnorm*{\Gamma}{2}`	$\|\Gamma\|_{L^2}$
	`\Lpnorm[\Big]{\Gamma}{2}`	$\Big\|\Gamma\Big\|_{L^2}$
L^p norm for specified measure	`\Lpmnorm{\Gamma}{2}{\mu}`	$\|\Gamma\|_{L^2(\mu)}$
	`\Lpmnorm*{\Gamma}{2}{\mu}`	$\|\Gamma\|_{L^2(\mu)}$
	`\Lpmnorm[\Big]{\Gamma}{2}{\mu}`	$\Big\|\Gamma\Big\|_{L^2(\mu)}$
L^p inner product	`\Lpinner{\Gamma}{\Gamma}{2}`	$\langle\Gamma, \Gamma\rangle_{L^2}$
	`\Lpinner*{\Gamma}{\Gamma}{2}`	$\langle\Gamma, \Gamma\rangle_{L^2}$
	`\Lpinner[\Big]{\Gamma}{\Gamma}{2}`	$\Big\langle\Gamma, \Gamma\Big\rangle_{L^2}$
L^p inner product for specified measure	`\Lpminner{\Gamma}{\Gamma}{2}{\mu}`	$\langle\Gamma, \Gamma\rangle_{L^2(\mu)}$
	`\Lpminner*{\Gamma}{\Gamma}{2}{\mu}`	$\langle\Gamma, \Gamma\rangle_{L^2(\mu)}$
	`\Lpminner[\big]{\Gamma}{\Gamma}{2}{\mu}`	$\big\langle\Gamma, \Gamma\big\rangle_{L^2(\mu)}$

3.11 Paired delimiters

Description	Example	Text style	Display style
Round brackets	`\rbra{\frac{x}{y}}`	$(\frac{x}{y})$	$(\frac{x}{y})$
Curly brackets	`\cbra*{\frac{x}{y}}`	$\left\{\frac{x}{y}\right\}$	$\left\{\frac{x}{y}\right\}$
Square brackets	`\sbra[\bigg]{\frac{x}{y}}`	$\left[\frac{x}{y}\right]$	$\left[\frac{x}{y}\right]$
Absolute value	`\abs{\frac{x}{y}}`	$\lvert\frac{x}{y}\rvert$	$\lvert\frac{x}{y}\rvert$
Set	`\set{\frac{x}{y}, \frac{y}{z}}`	$\{\frac{x}{y}, \frac{y}{z}\}$	$\{\frac{x}{y}, \frac{y}{z}\}$
Floor	`\floor{\frac{x}{y}}`	$\lfloor\frac{x}{y}\rfloor$	$\lfloor\frac{x}{y}\rfloor$
Ceiling	`\ceil{\frac{x}{y}}`	$\lceil\frac{x}{y}\rceil$	$\lceil\frac{x}{y}\rceil$
Cardinality	`\card{\f[h]A}`	$\lvert\widehat{A}\rvert$	$\lvert\widehat{A}\rvert$

4 Example Document

(!!) TODO: a full example in basic latex versus shortex

- aasdf