

Typst Math for Undergrads

This is a Typst port of *LaTeX Math for Undergrads* by Jim Hefferon. The original version is available at <https://gitlab.com/jim.hefferon/undergradmath>.

Meaning of annotations

2023-03-25 ✕

This is unavailable. Last check date is 2023-03-25.



Get this in a tricky way. Need a simpler method.

No idea 😞

Don't know how to get this.

Rule One Any mathematics at all, even a single character, gets a mathematical setting. Thus, for “the value of x is 7” enter the value of $\$x\$$ is $\$7\$$.

Template Your document should contain at least this.

-- document body here --

Common constructs

x^2 $x^{\wedge}2$ $\sqrt{2}$, $\sqrt[3]{3}$ $\text{sqrt}(2)$, $\text{root}(n, 3)$
 $x_{i,j}$ $x_{\text{~}(i, j)}$ $\frac{2}{3}$, $2/3$ $2 \div 3$, $2 \setminus 3$ or $2 \text{ slash } 3$

Calligraphic letters Use as in $\text{\textit{cal}}(A)$.

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Getting script letters is 2023-03-25 ✕.

Greek

α alpha	ξ, Ξ xi, Xi
β beta	\omicron omicron
γ, Γ gamma, Gamma	π, Π pi, Pi
δ, Δ delta, Delta	ϖ pi.alt
ϵ epsilon.alt	ρ rho
ε epsilon	ϱ rho.alt
ζ zeta	σ, Σ sigma, Sigma
η eta	ς \u{03C2} ☹
θ, Θ theta, Theta	τ tau
ϑ theta.alt	υ, Υ upsilon, Upsilon
ι iota	ϕ, Φ phi.alt, Phi
κ K	φ phi
λ, Λ lambda, Lambda	χ chi
μ mu	ψ, Ψ psi, Psi
ν nu	ω, Ω omega, Omega

Sets and logic

\cup union	\mathbb{R} RR, bb(R)	\forall forall
\cap sect	\mathbb{Z} ZZ, bb(Z)	\exists exists
\subset subset	\mathbb{Q} QQ, bb(Q)	\neg not
\subseteq subset.eq	\mathbb{N} NN, bb(N)	\vee or
\supset supset	\mathbb{C} CC, bb(C)	\wedge and
\supseteq supset.eq	\emptyset ☹	\vdash tack.r
\in in	\emptyset nothing	\models models
\notin in.not	\aleph alef	\setminus without

Negate an operator, as in $\not\subset$, with `subset.not`. Get the set complement A^c with `A^(sans(c))` (or A^c with `A^(complement)`, or \overline{A} with `overline(A)`).

Remark The character \emptyset from `\varnothing` in $\text{\texttt{LaTeX}}$ is an alternative character of \emptyset from `nothing` in Typst (`\emptyset` in $\text{\texttt{LaTeX}}$). See the Version 3.93 section of README at <https://www.ctan.org/tex-archive/fonts/>

`newcomputermodern`. You can create the `\varnothing` character with a `let` binding using specific fonts.

Decorations

f' <code>f', f prime</code>	\dot{a} <code>dot(a)</code>	\tilde{a} <code>tilde(a)</code>
f'' <code>f prime.double</code>	\ddot{a} <code>diaer(a)</code>	\bar{a} <code>macron(a)</code>
Σ^* <code>Sigma^*</code>	\hat{a} <code>hat(a)</code>	\vec{a} <code>arrow(a)</code>

If the decorated letter is i or j then some decorations need `\u{1D6A4}` ☹ and `\u{1D6A5}` ☹, as in \vec{i} with `arrow(\u{1D6A4})`. Some authors use boldface for vectors: `bold(x)`.

Entering `overline(x + y)` produces $\overline{x + y}$, and `hat(x + y)` gives $\hat{x + y}$. Comment on an expression as here (there is also `overbrace(...)`).

$\underbrace{x + y}_{|A|}$ `underbrace(x + y, |A|)`

Dots Use low dots in a list $\{0, 1, 2, \dots\}$, entered as `\{0, 1, 2, \dots\}`. Use centered dots in a sum or product $1 + \dots + 100$, entered as `1 + dots.h.c + 100`. You can also get vertical dots `dots.v`, diagonal dots `dots.down` and anti-diagonal dots `dots.up`.

Roman names Just type them!

\sin <code>sin</code>	\sinh <code>sinh</code>	\arcsin <code>arcsin</code>
\cos <code>cos</code>	\cosh <code>cosh</code>	\arccos <code>arccos</code>
\tan <code>tan</code>	\tanh <code>tanh</code>	\arctan <code>arctan</code>
\sec <code>sec</code>	\coth <code>coth</code>	\min <code>min</code>
\csc <code>csc</code>	\det <code>det</code>	\max <code>max</code>
\cot <code>cot</code>	\dim <code>dim</code>	\inf <code>inf</code>
\exp <code>exp</code>	\ker <code>ker</code>	\sup <code>sup</code>
\log <code>log</code>	\deg <code>deg</code>	\liminf <code>liminf</code>
\ln <code>ln</code>	\arg <code>arg</code>	\limsup <code>limsup</code>
\lg <code>lg</code>	\gcd <code>gcd</code>	\lim <code>lim</code>

Other symbols

$<$ <code><, lt</code>	\angle <code>angle</code>	\cdot <code>dot.op</code>
\leq <code><=, lt.eq</code>	\sphericalangle <code>angle.arc</code>	\pm <code>plus.minus</code>
$>$ <code>>, gt</code>	ℓ <code>ell</code>	\mp <code>minus.plus</code>
\geq <code>>=, gt.eq</code>	\parallel <code>parallel</code>	\times <code>times</code>
\neq <code>eq.not</code>	45° <code>45 degree</code>	\div <code>div</code>
\ll <code><<, lt.double</code>	\cong <code>tilde.eqq</code>	$*$ <code>*, ast.op</code>
\gg <code>>>, gt.double</code>	\ncong <code>tilde.eqq.not</code>	\mid <code>divides</code>
\approx <code>approx</code>	\sim <code>tilde.op</code>	\nmid <code>divides.not</code>
\asymp <code>\u{224D}</code> ☹	\simeq <code>tilde.eq</code>	$n!$ <code>n!</code>
\equiv <code>ident</code>	\simeq <code>tilde.not</code>	∂ <code>diff</code>
\prec <code>prec</code>	\oplus <code>plus.circle</code>	∇ <code> nabla</code>
\preceq <code>prec.eq</code>	\ominus <code>minus.circle</code>	\hbar <code>planck.reduce</code>
\succ <code>succ</code>	\odot <code>dot.circle</code>	\circ <code>circle.stroked.tiny</code>
\succeq <code>succ.eq</code>	\otimes <code>times.circle</code>	\star <code>star.op</code>
\propto <code>prop</code>	\oslash <code>\u{2298}</code> ☹	$\sqrt{\quad}$ <code>sqrt("")</code>
No idea 😞	\upharpoonright <code>harpoon.tr</code>	\checkmark <code>checkmark</code>

Use `a divides b` for the divides relation, `a | b`, and `a divides.not b` for the negation, `a \nmid b`. Use `|` to get set builder notation $\{a \in S \mid a \text{ is odd}\}$ with `\{a in S | a "is odd"\}`.

Arrows

\rightarrow <code>->, arrow.r</code>	\mapsto <code> ->, arrow.r.bar</code>
\nrightarrow <code>arrow.r.not</code>	\mapsto <code>arrow.r.long.bar</code>
\longrightarrow <code>arrow.r.long</code>	\leftarrow <code><-, arrow.l</code>
\Rightarrow <code>=>, arrow.r.double</code>	\leftrightarrow <code><->, arrow.l.r</code>
\nRightarrow <code>arrow.r.double.not</code>	\downarrow <code>arrow.b</code>

