

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

2023-03-31 ✗ This is unavailable. Last check date is 2023-03-31.



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^2` $\sqrt{2}$, $\sqrt[3]{3}$ `sqrt(2)`, `root(n, 3)`
 $x_{i,j}$ `x_(i, j)` $\frac{2}{3}$, $\frac{2}{3} \cdot 2$ `2 / 3`, $2 \cdot 2$ `2 \cdot 2` or `2 slash 3`

Calligraphic letters Use as in `$cal(A)$`.

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 2023-03-31 ✗.

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	\varnothing diameter	\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 Using `diameter` for `\varnothing` may cause some confusion. However, \LaTeX also uses \varnothing (`\u{2300}`) instead of \emptyset (`\u{2205}`), see [newcm §13.3](#). Another solution is to use `text(font: "Fira Sans", nothing)`, but the resul-

tant glyph \varnothing is subtly different from the widely used one. Ultimately, The choice is always **your decision**.

Decorations

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

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, ...}`. 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 sin	\sinh sinh	\arcsin arcsin
\cos cos	\cosh cosh	\arccos arccos
\tan tan	\tanh tanh	\arctan arctan
\sec sec	\coth coth	\min min
\csc csc	\det det	\max max
\cot cot	\dim dim	\inf inf
\exp exp	\ker ker	\sup sup
\log log	\deg deg	\liminf liminf
\ln ln	\arg arg	\limsup limsup
\lg lg	\gcd gcd	\lim lim

Other symbols

$<$ lt	\angle angle	\cdot dot.op
\leq lt.eq	\sphericalangle angle.arc	\pm plus.minus
$>$ gt	ℓ ell	\mp minus.plus
\geq gt.eq	\parallel parallel	\times times
\neq !=, eq.not	45° 45 degree	\div div
\ll lt.double	\cong tilde.eqq	$*$ *, ast.op
\gg gt.double	\ncong tilde.eqq.not	$ $ divides
\approx approx	\sim tilde.op	\nmid divides.not
\asymp \u{224D}	\simeq tilde.eq	$n!$ n!
\equiv ident	\simeq tilde.not	∂ diff
\prec prec	\oplus plus.circle	∇ nabla
\preceq prec.eq	\ominus minus.cirle	\hbar planck.reduce
\succ succ	\odot dot.circle	\circ circle.stroked.tiny
\succeq succ.eq	\otimes times.circle	\star star.op
\propto prop	\oslash \u{2298}	$\sqrt{\quad}$ sqrt("")
\doteq \u{2250}	\harpoonright harpoon.tr	\checkmark checkmark

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

