

Typst Syntax Equation Bank

70 equations across 5 categories — Calculus, Linear Algebra, Logic, Set Theory, Symbols & Operators

CALCULUS

Category	Expression
Definite integral	$\int_0^1 x^2 \, dx$
Integral with fraction	$\int_a^b \frac{1}{1+x^2} \, dx$
Improper integral	$\int_0^\infty e^{-x} \, dx$
Double integral	$\iint_A f(x, y) \, dx \, dy$
Triple integral	$\iiint_V \rho(x, y, z) \, dV$
Contour integral	$\oint_C \mathbf{F} \cdot d\mathbf{r}$
Partial derivative	$\partial f / \partial x$
2nd partial derivative	$\partial^2 u / \partial x^2$
Limit	$\lim_{x \rightarrow 0} \frac{\sin x}{x} = 1$
Euler limit	$\lim_{n \rightarrow \infty} \left(1 + \frac{1}{n}\right)^n = e$
Derivative notation	$\frac{d}{dx} (x^3) = 3x^2$
Nabla divergence	$\nabla \cdot \mathbf{F} = 0$
Nabla curl	$\nabla \times \mathbf{F} = 0$
Summation	$\sum_{k=1}^n k = \frac{n(n+1)}{2}$
Product (factorial)	$\prod_{i=1}^n i = n!$

LINEAR ALGEBRA

Category	Expression
Vector (3D)	$\begin{bmatrix} 1 \\ 2 \\ a \end{bmatrix}$
Symbolic vector	$\begin{bmatrix} a \\ b \end{bmatrix}$
Identity matrix	$\begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}$
2x2 matrix	$\begin{pmatrix} 1 & 2 \\ 3 & 4 \end{pmatrix}$
Linear system	$Ax = b$

Transpose product	$A^T A$
Determinant	$\det = \lambda_1 \lambda_2$
Rank inequality	$\text{rank}(A) \leq n$
Kernel subset	$\ker \subseteq V$
Image subset	$\text{im} \subseteq W$
Dot product	$x \cdot y = 0$
Cross product	$x \times y$
Norm (Euclidean)	$\ x\ = \sqrt{x_1^2 + x_2^2}$
Delimited matrix	$\begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}$
SVD decomposition	$A = U \Sigma V^T$

LOGIC

Category	Expression
Universal & existential	$\forall x \in \mathbb{R}, \exists y \in \mathbb{R}: y \geq x$
Law of excluded middle	$\forall p, p \vee \neg p$
Conjunction elimination	$p \wedge q \Rightarrow p$
Biconditional	$p \Leftrightarrow q$
Implication	$p \Rightarrow q$
De Morgan's law	$\neg (p \wedge q) \Leftrightarrow (\neg p) \vee (\neg q)$
Turnstile	$p \vdash q$
Semantic entailment	$\Gamma \models \phi$
Tautology / contradiction	$\top \neq \perp$
Existential statement	$\exists x: P(x)$
Arrow notation	$\alpha \rightarrow \beta$
Transitivity	$A \leq B \wedge B \leq C \Rightarrow A \leq C$

SET THEORY

Category	Expression
Element of	$x \in A$
Not element of	$x \notin A$
Proper subset	$A \subset B$

Subset or equal	$A \subseteq B$
Superset or equal	$A \supseteq B$
Union	$A \cup B$
Intersection	$A \cap B$
Set difference	$A \setminus B$
Empty set	$\emptyset \subseteq A$
Number sets inclusion	$\mathbb{R}^3 \subseteq \mathbb{C}^3$
Number set chain	$\mathbb{N} \subseteq \mathbb{Z} \subseteq \mathbb{Q} \subseteq \mathbb{R} \subseteq \mathbb{C}$
Function mapping	$f: A \rightarrow B$
Mapsto notation	$f: A \rightarrow B, x \mapsto f(x)$
SYMBOLS & OPERATORS	
Category	Expression
Greek sum	$\alpha + \beta = \gamma$
Not equal	$\theta \neq \pi$
Greater or equal	$\lambda \geq 0$
Less or equal	$\mu \leq \nu$
Approximately equal	$\xi \approx \zeta$
Equivalence	$\phi \equiv \psi$
Aleph / infinity	$\aleph_0 < \infty$
Reduced Planck const	$\hbar \omega$
Angle notation	$\angle ABC = 90^\circ$
Parallel lines	$a \parallel b$
Perpendicular lines	$l \perp m$
Square root	$\sqrt{x^2 + y^2}$
Cube root	$\sqrt[3]{x}$
Fraction	$\frac{a+b}{c-d}$
Combined accents	$\acute{x} + \grave{y} + \acute{z}$