

Test Document

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1 Symbols

1.1 Misc

$\varepsilon, n^{-1}, \text{LHS}, \text{RHS}, \theta^\circ$

1.2 Sets

$\mathbb{N}, \mathbb{Z}, \mathbb{Q}, \mathbb{R}, \mathbb{C}$
 $\mathbb{P}, \mathbb{F}, \mathbb{Q}_\times, \#\mathbb{N}, \emptyset$

1.3 Functions

im, ker
sign, Id, $\mathbf{1}$

1.3.1 Trigonometric and Hyperbolic Functions

sin, cos, tan, cot, sec, csc
arcsin, arccos, arctan, arccot, arcsec, arccsc
sinh, cosh, tanh, coth, sech, csch
arsinh, arcosh, artanh, arcoth, arsech, arcsch

1.3.2 UK Notation

cosec, cosech, arccosec, arcosech

1.3.3 Exponential and Logarithmic Functions

exp, log, ln, lg, lb

1.4 Number Theory

$\varphi, \gcd, \lcm, \max, \min$
 $7 \bmod 2, 2 \mid 6, 2 \nmid 7$

1.5 Group Theory

Isom, Sym, Fix, Orb, Stab
 $\curvearrowright, \leq, \triangleleft$

1.6 Analysis

LUB, supremum, sup, GLB, infimum, inf
 \limsup, \liminf, \lim

1.6.1 Infinity

$\infty, +\infty, -\infty$

1.6.2 Differentiation

$$\begin{aligned} & \frac{dy}{dx}, \frac{d}{dx} \\ & \frac{d^2y}{dx^2}, \frac{d^2}{dx^2} \\ & \frac{\partial y}{\partial x}, \frac{\partial}{\partial x} \\ & \frac{\partial^2 y}{\partial x^2}, \frac{\partial^2}{\partial x^2} \end{aligned}$$

1.7 Probability

$\mathbb{P}, \mathbb{E}, \text{Var}, \text{Cov}, \text{Corr}$

1.7.1 Distribution

B, Po, N, Exp, Geo, U

1.8 Complex Numbers

$\arg, \text{Im}, \text{Re}, \bar{z}$

1.9 Linear Algebra

$\det, \text{tr}, \text{adj}, \text{null}, \text{rank}, \text{span}$

1.9.1 Matrices

$\mathbf{M}, \mathbf{I}, \mathbf{O}, \mathbf{M}^\top, \mathbf{M}^\dagger$

1.9.2 Matrix Groups

GL, SL, O, SO, U, SU, PGL, PSL

1.9.3 Basis Vectors

$\hat{\mathbf{i}}, \hat{\mathbf{j}}, \hat{\mathbf{k}}$

1.10 Paired Delimiters

$$\begin{aligned} & \left(\begin{matrix} a \\ b \end{matrix} \right), \left[\begin{matrix} a \\ b \end{matrix} \right], \left\{ \begin{matrix} a \\ b \end{matrix} \right\} \\ & \left\lceil \begin{matrix} a \\ b \end{matrix} \right\rceil, \left\lfloor \begin{matrix} a \\ b \end{matrix} \right\rfloor, \left| \begin{matrix} a \\ b \end{matrix} \right|, \left\langle \begin{matrix} a \\ b \end{matrix} \right\rangle \\ & \left\{ x \in \mathbb{R} \mid x = \frac{a}{b} \right\} \end{aligned}$$

2 Theorems

Definition 2.1 (Some Definition)

This is a *definition*.

Theorem 2.2 (Very Important Theorem)

This is a very important theorem.

Proof: Some proof. ■

Examples

Some examples of the theorem.

Notation. The previous theorem allows us to abuse notation.

Corollary 2.3 (Obvious Corollary)

A corollary.

Example (An example)

An example.

Lemma 2.4 (Some Lemma)

Some lemma.

Claim 2.5 (Some Claim)

Some claim.

Remark. This is a remark on the claim.

Proposition 2.6 (Some Proposition)

A proposition.

Remarks. Some remarks on this proposition.

Referencing works as well, like Definition 2.1, Theorem 2.2, Corollary 2.3, Lemma 2.4, Claim 2.5 and Proposition 2.6.