

1 Exercises

All examples below can be done more easily and prettily using advanced packages, but the solutions proposed only make use of standard L^AT_EX tools.

1.1 Parentheses

Braces

$$X = \{1, 2, 3, 4\} \quad (1)$$

Square brackets

$$X[1] \quad (2)$$

Parentheses

$$f(x) := y/(1-x)^2 \quad (3)$$

1.2 Dots

$$X = \{1, \dots, 4\} \quad (4)$$

1.3 Matrices

$$A = \begin{pmatrix} 1 & 2 \\ 3 & 4 \end{pmatrix} \quad (5)$$

1.4 summary

$$A = \begin{pmatrix} a_{11} & \cdots & a_{1n} \\ \vdots & & \vdots \\ a_{m1} & \cdots & a_{mn} \end{pmatrix} \quad (6)$$

1.5 Predefined Symbols

$$\pi, \pm\infty, \emptyset, \varepsilon \quad (7)$$

1.6 Predefined functions

Frequently used functions like sinus, cosinus, limit, infimum, supremum, etc. should not appear in math mode's italic style, that is reserved for variables.

Sinus

$$\sin(\pi) \quad (8)$$

Limit

$$\lim_{x \rightarrow 0_+} \frac{\sin(x)}{x} \quad (9)$$

1.7 Sums and integrals

Sums

$$\sum_{i=1}^N i = \frac{N(N+1)}{2} \quad (10)$$

Integrals

$$\int_{-\infty}^{+\infty} e^{-\frac{x^2}{2}} \quad (11)$$