

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

$$X = \{1, 2, 3, 4\} \tag{1}$$

Square brackets

$$X[1] \tag{2}$$

Parentheses

$$f(x) := y/(1-x)^2 \tag{3}$$

1.2 Dots

$$X = \{1, \dots, 4\} \tag{4}$$

1.3 Matrices

$$A = \begin{pmatrix} 1 & 2 \\ 3 & 4 \end{pmatrix} \tag{5}$$

1.4 summary

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

1.5 Predefined Symbols

$$\pi, \pm\infty, \emptyset, \varepsilon \tag{7}$$

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

$$\sin(\pi) \tag{8}$$

Limit

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

1.7 Sums and integrals

Sums

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

Integrals

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