Matrices and related objects (determinants, norms etc) are generated using the packages *amsmath* provided by the American Mathematical Society. In the present example we load it together with the AMS symbol package (extended set of mathematical symbols) using the command: \usepackage{amsmath,amssymb}

Simple matrix:
$$\begin{bmatrix} 7 & 1 & 4 \\ 5 & 8 & 2 \\ 3 & 6 & 9 \end{bmatrix} \tag{1}$$

A determinant:
$$\begin{vmatrix} 7 & 1 & 4 \\ 5 & 8 & 2 \\ 3 & 6 & 9 \end{vmatrix} \tag{2}$$