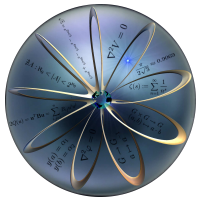

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symmetric matrix

Canonical name	SymmetricMatrix
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Entry type	Definition
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Synonym	symmetric
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Definition:
Let $A = (a_{ij})$ be a square matrix of order n. The matrix A is *symmetric* if $a_{ij} = a_{ji}$ for all $1 \leq i \leq n, 1 \leq j \leq n$.

$$A = \begin{pmatrix} a_{11} & \cdots & a_{1n} \\ \vdots & \ddots & \vdots \\ a_{n1} & \cdots & a_{nn} \end{pmatrix}$$

Properties:

1. $A^t = A$ where A^t is the matrix transpose

Examples:

- $\begin{pmatrix} a & b \\ b & c \end{pmatrix}$
- $\begin{pmatrix} a & b & c \\ b & d & e \\ c & e & f \end{pmatrix}$