



## Why

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### Definition

A matrix is *upper triangular* if all its entries below the diagonal are zero. A matrix is *lower triangular* if all its entries above the diagonal are zero. If, in addition, the diagonal is zero, then the matrix is *strictly upper triangular* and *strictly lower triangular* respectively.

A *triangular* matrix is either upper or lower triangular. A *strictly triangular* matrix is either strictly upper triangular or strictly lower triangular.

A *unit triangular matrix* is a triangular matrix (upper or lower) whose diagonal entries are one. Sometimes such matrices are called *unitriangular* (a *unitriangular matrix*). So we speak of *lower unit triangular*, *upper unit triangular*, *lower unitriangular* and *lower unitriangular* matrices.

### Other Terminology

Some authors call lower triangular matrices *left triangular* and upper triangular matrices *right triangular*. Historically, some authors have called triangular matrices *semidiagonal*.

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<sup>1</sup>These arise often. Future editions will clarify.



