In linear algebra, a matrix is in **echelon form** if it has the shape resulting from a Gaussian elimination.

A matrix being in **row echelon form** means that Gaussian elimination has operated on the rows and **column echelon form** means that Gaussian elimination has operated on the columns. In other words, a matrix is in column echelon form if its transpose is in row echelon form. Therefore, only row echelon forms are considered in the remainder of this article. The similar properties of column echelon form are easily deduced by transposing all the matrices. Specifically, a matrix is in **row echelon form** if

- all nonzero rows (rows with at least one nonzero element) are above any rows of all zeroes (all zero rows, if any, belong at the bottom of the matrix), and
- the leading coefficient (the first nonzero number from the left, also called the pivot) of a nonzero row is always strictly to the right of the leading coefficient of the row above it (some texts add the condition that the leading coefficient must be 1[1]).

These two conditions imply that all entries in a column below a leading coefficient are zeros.[2]

The following is an example of a 3×5 matrix in row echelon form, which is not in *reduced* row echelon form (see below):

Many properties of matrices may be easily deduced from their row echelon form, such as the rank and the kernel.