

# Gauss-Jordan

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10th May 2002

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## Explanation of the algorithm

Gauss-Jordan is based on two phases:

- Forward substitution: here all elements under the matrix major diagonal are reduced to 0 with elementar operations on rows.
- Backward substitution: all elements above the diagonal are reduced to zero if possible.

For matrix without full rank (determinant result to be zero for those matrices) you are suggested to use Gauss-Jordan with pivoting (you enable the swap of rows and columns during forward substitution), so the rows that are NULL (rows of zeros) will be the last in the matrix.

## Program

The program is composed by two files (FINDMAXS.000 and GJS00000.000 which correspond in Hp to .FINDMAX.S and GJ.S).

.FINDMAX.S is the subprogram used to swap columns and rows when you use Gauss-Jordan with total pivoting.