

**makesymmetric()** — Make square matrix symmetric (Hermitian)

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## Description

`makesymmetric(A)` returns  $A$  made into a symmetric (Hermitian) matrix by reflecting elements below the diagonal.

`_makesymmetric(A)` does the same thing but stores the result back in  $A$ .

## Syntax

*numeric matrix*    `makesymmetric(numeric matrix A)`

*void*                `_makesymmetric(numeric matrix A)`

## Remarks and examples

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If  $A$  is real, elements below the diagonal are copied into their corresponding above-the-diagonal position.

If  $A$  is complex, the conjugate of the elements below the diagonal are copied into their corresponding above-the-diagonal positions, and the imaginary part of the diagonal is set to zero.

Whether  $A$  is real or complex, roundoff error can make matrix calculations that are supposed to produce symmetric matrices produce matrices that vary a little from symmetry, and `makesymmetric()` can be used to correct the situation.

## Conformability

`makesymmetric(A)`:

*A*:         $n \times n$   
*result*:     $n \times n$

`_makesymmetric(A)`:

*A*:         $n \times n$

## Diagnostics

`makesymmetric(A)` and `_makesymmetric(A)` abort with error if  $A$  is not square. Also, `_makesymmetric()` aborts with error if  $A$  is a view.

## Also see

[M-5] [issymmetric\(\)](#) — Whether matrix is symmetric (Hermitian)

[M-4] [manipulation](#) — Matrix manipulation