

**diagonal()** — Extract diagonal into column vector

[Description](#)[Syntax](#)[Remarks and examples](#)[Conformability](#)[Diagnostics](#)[Also see](#)

## Description

`diagonal(A)` extracts the diagonal of  $A$  and returns it in a column vector.

## Syntax

*numeric colvector* `diagonal(numeric matrix A)`

## Remarks and examples

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`diagonal()` may be used with nonsquare matrices.

Do not confuse `diagonal()` with its functional inverse, `diag()`; see [M-5] [diag\(\)](#). `diagonal()` extracts the diagonal of a matrix into a vector; `diag()` creates a diagonal matrix from a vector.

## Conformability

`diagonal(A)`:

<i>A</i> :	$r \times c$
<i>result</i> :	$\min(r, c) \times 1$

## Diagnostics

None.

## Also see

[M-5] [diag\(\)](#) — Create diagonal matrix

[M-5] [isdiagonal\(\)](#) — Whether matrix is diagonal

[M-5] [blockdiag\(\)](#) — Block-diagonal matrix

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