

**isreal()** — Storage type of matrix

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## Description

`isreal(X)` returns 1 if *X* is a **real** and returns 0 otherwise.

`iscomplex(X)` returns 1 if *X* is a **complex** and returns 0 otherwise.

`isstring(X)` returns 1 if *X* is a **string** and returns 0 otherwise.

`ispointer(X)` returns 1 if *X* is a **pointer** and returns 0 otherwise.

## Syntax

*real scalar* `isreal(transmorphic matrix X)`

*real scalar* `iscomplex(transmorphic matrix X)`

*real scalar* `isstring(transmorphic matrix X)`

*real scalar* `ispointer(transmorphic matrix X)`

## Remarks and examples

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These functions base their results on storage type. `isreal()` is not the way to check whether a number is real, since it might be stored as a complex and yet still be a real number, such as  $2 + 0i$ . To determine whether *x* is real, you want to use `isrealvalues(X)`; see [\[M-5\] isrealvalues\(\)](#).

## Conformability

`isreal(X)`, `iscomplex(X)`, `isstring(X)`, `ispointer(X)`:

*X*:  $r \times c$   
*result*:  $1 \times 1$

## Diagnostics

These functions return 1 or 0; they cannot fail.

## Also see

[M-5] `eltype()` — Element type, organizational type, and type name of object

[M-5] `isrealvalues()` — Whether matrix contains only real values

[M-4] `Utility` — Matrix utility functions