Title

> **epsilon( ) —** Unit roundoff error (machine precision)

Description   Syntax   Remarks and examples   Conformability
Diagnostics   Also see

Description

epsilon(x) returns the unit roundoff error in quantities of size abs(x).

Syntax

> *real scalar*   epsilon(*real scalar x*)

Remarks and examples

On all computers on which Stata and Mata are currently implemented—which are computers following IEEE standards—epsilon(1) is 1.0X–34, or about 2.22045e–16. This is the smallest amount by which a real number can differ from 1.

epsilon(x) is abs(x)*epsilon(1). This is an approximation of the smallest amount by which a real number can differ from x. The approximation is exact at integer powers of 2.

Conformability

epsilon(x):
              x: 1×1
         result: 1×1

Diagnostics

epsilon(x) returns . if x is missing.

Also see

[M-5] **edittozero( )** — Edit matrix for roundoff error (zeros)

[M-5] **mindouble( )** — Minimum and maximum nonmissing value

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