dsign() — FORTRAN-like DSIGN() function

Description

design(a, b) returns a with the sign of b, defined as |a| if \( b \geq 0 \) and \(-|a|\) otherwise.

This function is useful when translating FORTRAN programs.

The in-line construction

\[
(b \geq 0 ? \text{abs}(a) : -\text{abs}(a))
\]

is clearer. Also, differentiate carefully between what dsign() returns (equivalent to the above construction) and signum(b)\*abs(a), which is almost equivalent but returns 0 when \( b \) is 0 rather than \text{abs}(a). (Message: dsign() is not one of our favorite functions.)

Syntax

\[
\text{real scalar} \quad \text{dsign}(\text{real scalar } a, \text{ real scalar } b)
\]

Conformability

\[
\text{dsign}(a, b):
\]

\[
a: \quad 1 \times 1
\]

\[
b: \quad 1 \times 1
\]

\[
\text{result}: \quad 1 \times 1
\]

Diagnostics

\[
\text{dsign}(., b) \text{ returns . for all } b.
\]

\[
\text{dsign}(a, .) \text{ returns abs}(a) \text{ for all } a.
\]

Also see

[M-5] sign() — Sign and complex quadrant functions

[M-4] Scalar — Scalar mathematical functions