

sign() — Sign and complex quadrant functions
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Description

`sign(R)` returns the elementwise sign of *R*. `sign()` is defined

Argument range	sign(<i>arg</i>)
<i>arg</i> ≥ .	.
<i>arg</i> < 0	−1
<i>arg</i> = 0	0
<i>arg</i> > 0	1

`quadrant(Z)` returns a real matrix recording the quadrant of each complex entry in *Z*. `quadrant()` is defined

Argument range		quadrant(<i>arg</i>)
Re(<i>arg</i>)	Im(<i>arg</i>)	
Re ≥ .		.
Re = 0	Im = 0	.
Re > 0	Im ≥ 0	1
Re ≤ 0	Im > 0	2
Re < 0	Im ≤ 0	3
Re ≥ 0	Im < 0	4

`quadrant(1+0i)==1`, `quadrant(-1+0i)==3`
`quadrant(0+1i)==2`, `quadrant(0-1i)==4`

Syntax

real matrix `sign(real matrix R)`

real matrix `quadrant(complex matrix Z)`

Conformability

`sign(R)`:

R: $r \times c$
result: $r \times c$

`quadrant(Z)`:

Z: $r \times c$
result: $r \times c$

Diagnostics

`sign(R)` returns missing when *R* is missing.

`quadrant(Z)` returns missing when *Z* is missing.

Also see

[M-5] **dsign()** — FORTRAN-like DSIGN() function

[M-4] **Scalar** — Scalar mathematical functions