

scalar — Scalar mathematical functions

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[M-5] Manual entry	Function	Purpose
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Complex

Re()	Re() Im()	real part imaginary part
C()	C()	make complex

Sign related

abs()	abs()	absolute value (length if complex)
sign()	sign() quadrant()	sign function quadrant of value
dsign()	dsign()	FORTRAN-like DSIGN function
conj()	conj()	complex conjugate

Transcendental & square root

exp()	exp() ln(), log() log10() expm1() ln1p(), log1p() ln1m(), log1m()	exponentiation natural logarithm base-10 logarithm $\exp() - 1$ natural logarithm of $(1 + x)$ natural logarithm of $(1 - x)$
sqrt()	sqrt()	square root

Transcendental & square root, continued

sin()	sin()	sine
	cos()	cosine
	tan()	tangent
	asin()	arcsine
	acos()	arccosine
	atan()	arctangent
	arg()	arctangent of complex
	atan2()	two-argument arctangent
	sinh()	hyperbolic sine
	cosh()	hyperbolic cosine
	tanh()	hyperbolic tangent
	asinh()	inverse-hyperbolic sine
	acosh()	inverse-hyperbolic cosine
	atanh()	inverse-hyperbolic tangent
	pi()	value of π

Factorial & gamma

factorial()	factorial()	factorial
	lnfactorial()	natural logarithm of factorial
	gamma()	gamma function
	lngamma()	natural logarithm of gamma function
	digamma()	derivative of lngamma()
	trigamma()	second derivative of lngamma()

Modulus & integer rounding

mod()	mod()	modulus
trunc()	trunc()	truncate to integer
	floor()	round down to integer
	ceil()	round up to integer
	round()	round to closest integer or multiple

Dates

date()	clock()	%tc of string
	mdyhms()	%tc of month, day, year, hour, minute, and second
	dhms()	%tc of %td, hour, minute, and second
	hms()	%tc of hour, minute, and second
	hh()	hour of %tc
	mm()	minute of %tc
	ss()	second of %tc
	dofc()	%td of %tc
	Cofc()	%tC of %tc
	Clock()	%tC of string
	Cmdyhms()	%tC of month, day, year, hour, minute, and second
	Cdhms()	%tC of %td, hour, minute, and second
	Chms()	%tC of hour, minute, and second
	hhC()	hour of %tC
	mmC()	minute of %tC
	ssC()	second of %tC
	dofC()	%td of %tC
	date()	%td of string
	mdy()	%td of month, day, and year
	yw()	%tw of year and week
	ym()	%tm of year and month
	yq()	%tq of year and quarter
	yh()	%th of year and half
	cofd()	%tc of %td
	Cofd()	%tC of %td
	dofb()	%td of %tb
	bofd()	%tb of %td
	month()	month of %td
	day()	day-of-month of %td
	year()	year of %td
	dow()	day-of-week of %td
	week()	week of %td
	quarter()	quarter of %td
	halfyear()	half-of-year of %td
	doy()	day-of-year of %td

date(), continued	yearly()	%ty of string
	yofd()	%ty of %td
	dofy()	%td of %ty
	halfyearly()	%th of string
	hofd()	%th of %td
	dofh()	%td of %th
	quarterly()	%tq of string
	qofd()	%tq of %td
	dofq()	%td of %tq
	monthly()	%tm of string
	mofd()	%tm of %td
	dofm()	%td of %tm
	weekly()	%tw of string
	wofd()	%tw of %td
	dofw()	%td of %tw
	hours()	hours of milliseconds
	minutes()	minutes of milliseconds
	seconds()	seconds of milliseconds
	msofhours()	milliseconds of hours
	msofminutes()	milliseconds of minutes
	msofseconds()	milliseconds of seconds

Description

With a few exceptions, the above functions are what most people would consider scalar functions, although in fact all will work with matrices, in an element-by-element fashion.

Remarks and examples

[stata.com](https://www.stata.com)

For other mathematical functions, see

[M-4] matrix	Matrix functions
[M-4] mathematical	Important mathematical functions
[M-4] statistical	Statistical functions

Also see

[M-4] [intro](#) — Categorical guide to Mata functions