Title

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Scalar — Scalar mathematical functions

Contents Description Remarks and examples Also see

Contents

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

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

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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