SigmaConsole

Mathematical Console

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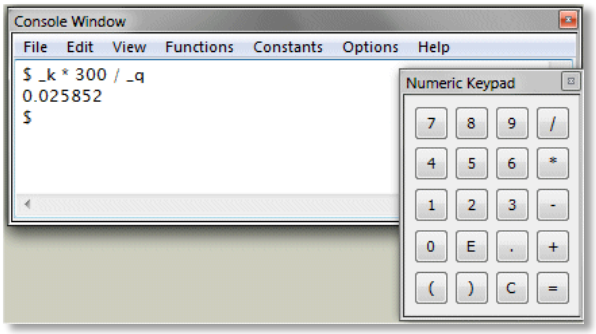

SigmaConsole is an advanced mathematical console. It supports the most common and useful functions. It's easy to use: to evaluate an expression, simply write it, using operators (+ - * / ^), parenthesis and mathematical functions and press ENTER. You can also use the numeric keypad to enter numbers and operators. You can set variables (with any non-reserved name), using fundamental constants, etc. The **SigmaConsole** menu gives you an easy way to use the software functionality.

SigmaConsole is a component of SigmaGraph and is now open-source and released under the MIT license since its version 2.6.10. The source code is published in github: **https://github.com/sidihamady/SigmaGraph**

The following mathematical **functions** are supported:

exp(x)	// exponential
ln(x)	// natural logarithm
log(x)	// decimal logarithm
log2(x)	// base-2 logarithm
pow(x,n)	// x^n
sin(x)	// sine
cos(x)	// cosine
tan(x)	// tangent
asin(x)	// arc sine
acos(x)	// arc cosine
atan(x)	// arc tangent
sinh(x)	// hyperbolic sine
cosh(x)	// hyperbolic cosine
tanh(x)	// hyperbolic tangent
abs(x)	// absolute value
sqrt(x)	// square root
ceil(x)	// ceiling, the smallest integer not less than x
floor(x)	// floor, the largest integer not greater than x
int(x)	// integer part of x
fmod(x,y)	// x modulo y
erf(x)	// error function
j0(x)	// Bessel function of x of the first kind of order 0
j1(x)	// Bessel function of x of the first kind of order 1
jn(n,x)	// Bessel function of x of the first kind of order n

y0(x)	// Bessel function of x of the second kind of order 0
y1(x)	// Bessel function of x of the second kind of order 1
yn(n,x)	// Bessel function of x of the second kind of order n
bern(x)	// Bernoulli function: x / (exp(x) – 1)
gauss(x,μ,σ)	// Gauss function: $\exp((x - \mu)^2 / 2\sigma^2)$
lorentz(x,μ,σ)	// Lorentz function: $\sigma / ((x - \mu)^2 + \sigma^2)$
hypot(x,y)	// hypotenuse, $\sqrt{x^2 + y^2}$
min(x,y)	// smallest value of x and y
max(x,y)	// largest value of x and y
rand(x)	// random number between 0 and 1 (if x ≠ 0 then initialize the generator)
time()	// elapsed time in seconds since January 1, 1970
sign(x)	// sign of x (-1 if x < 0, +1 if x > 0 and 0 if x = 0)
exp2(x)	// 2^x
log2(x)	// logarithm base 2
cbrt(x)	// cubic root
hypot(x,y)	// $\sqrt{x^2+y^2}$
erf(x)	// error function
erfc(x)	// complementary error function
lgamma(x)	// ln(gamma(x))
tgamma(x)	// gamma(x)
trunc(x)	// nearest integer
round(x)	// nearest integer, rounding
rint(x)	// rounds the floating-point to an integer

Constants:

Pi	// π
_q	// electron charge
_m	// electron mass
_k	// Boltzmann constant
_h	// Planck constant
_c	// speed of light in vacuum
_e	// vacuum permittivity
_n	// Avogadro constant

Commands:

format short	// set the numerical format to short
format long	// set the numerical format to long
help	// show help
exit	// exit the application

Specifications

SYSTEM REQUIREMENTS

SigmaConsole runs on PC with Windows™ XP, Vista or Windows 7/8/10 installed.

The basic hardware requirements are:

- Pentium or better microprocessor.
- 256 MB RAM.
- 2 MB of hard disk space.
- VGA monitor with 800x600 or higher resolution.

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