

List of mathematical operators and functions which can be used in the AlpES WebGIS calculation tool.

Note: remember to always put a space character between operators and operands. While some operators work without extra space characters, others might not.

Mathematical Operators

Operator	Description	Example	Value
+	addition	2 + 3	5
-	subtraction	2 - 3	-1
*	multiplication	2 * 3	6
/	division (integer division - truncates the result) - 0 as argument not allowed	5 / 2	2
%	modulo (remainder of division) - 0 as argument not allowed	5 % 2	1
^	exponentiation (associates left to right)	2 ^ 3	8
/	square root - negative argument not allowed	/ 25	5
/	cube root - negative argument not allowed	/ 27	3
@	absolute value	@ -2.42	2.42

Mathematical Functions

Function	Description	Example	Result
abs(x)	absolute value, same as operator @	abs(-2.42)	2.42
cbt(x)	cube root	cbt(27.0)	3
ceil(x)	nearest integer greater than or equal to argument	ceil(-42.8)	-42
degrees(x)	radians to degrees	degrees(0.5)	28.64...
div(y, x)	integer quotient of y/x	div(9, 4)	2
exp(x)	exponential	exp(1.0)	2.718...
floor(x)	nearest integer less than or equal to argument	floor(-42.8)	-43
ln(x)	natural logarithm - 0 as argument not allowed	ln(2.0)	0.693...
log(x)	base 10 logarithm - 0 as argument not allowed	log(100.0)	2
log(b, x)	logarithm to base b	log(2.0, 64.0)	6
mod(x, y)	remainder of y/x	mod(9, 4)	1
pi()	pi constant	pi()	3.141...
power(x, y)	x raised to the power of y	power(9, 2)	729
radians(x)	degrees to radians	radians(45.0)	0.785...
round(x)	round to nearest integer	round(42.4)	42
round(x, y)	round to y decimal places	round(32.36, 1)	32.4
sign(x)	sign of the argument (-1, 0, +1)	sign(-4.1)	-1
sqrt(x)	square root, same as operator / - negative argument not allowed	sqrt(2.0)	1.414...
trunc(x)	truncate toward zero	trunc(42.8)	42
trunc(x, y)	truncate to y decimal places	trunc(42.43, 1)	42.4

Random Functions

Function	Description
random()	random value in the range $0.0 \leftarrow x < 1.0$

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