

# CLI Calculator Manual

([github.com/majestic53/CLI-Calc](https://github.com/majestic53/CLI-Calc))

Version 0.1.2

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## I. Introduction

CLI Calculator is a small terminal based calculator utility which can be used in conjunction with other terminal based utilities to perform various mathematical operations. CLI Calculator supports alpha-numeric variables as well as a variety of mathematical functions. CLI Calculator can take expressions as input, or if no input is given, the calculator enters an interactive mode.

## II. Installation

Instructions for compiling CLI Calc from source code

- **Requirements** (tested on):
  - libmpfr 3 or newer
  - libgmp 3 or newer
  - g++ 4.4.3 or newer
  - make 3.8 or newer
- For Debian:
  - `sudo apt-get install build-essential libgmp3-dev libmpfr-dev make`
- **Install:**
  - `make`
  - `make install`  
(might require administrator privileges)
- **Uninstall:**
  - `make uninstall`  
(might require administrator privileges)

## III. How to Use

In a terminal window, type:

```
cli-calc <expression>... (to evaluate a series of expressions)
```

or

```
cli-calc (to enter interactive mode)
```

Once in interactive mode, a prompt (“>>”) will be given. At this point the user can issue expressions, which will be evaluated when the user hits return:

```
>> (2 + 2) * 4 / float 5
3.2
>>
```

Alpha-numeric variables are supported, as well as a variety of mathematical functions (see the section below for a complete list of functions):

```
>> make x fact 10 (assign the variable x the value of 10!)
>> state (view the contents of the global state)
x - - > 3628800
>>
```

(The global state can be reset by issuing the command 'reset')

## IV. Functions

When in interactive mode, the user can issue the command 'help' for a full list of available functions.

about	--	print credits
abs	--	absolute value
acos	--	arc cosine
asin	--	arc sine
atan	--	arc tangent
ceiling	--	ceiling (maintains type)
constants	--	e, pi
cos	--	cosine
cosh	--	hyperbolic cosine
fact [n]	--	factorial
fib [n]	--	Fibonacci sequence
float	--	cast to floating-point
floor	--	floor (maintains type)
int	--	cast to integer
ln	--	natural log (log-base-e)
log2	--	log-base-2
log10	--	log-base-10
make	--	assign an id to an expression
rand	--	normalized random numbers (0-1)
reset	--	resets the global state
round	--	round to nearest integer (maintains type)
sin	--	sine
sinh	--	hyperbolic sine

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