

## Contents for RPNCalc Help

**RPNCalc** is an engineering/scientific unit calculator which provides hundreds of built-in mathematical, trigonometric, complex number, statistical, probability, base, and conversion functions. **RPNCalc** is an RPN (Reverse Polish Notation) based calculator with an **x, y, z, t,** and last**x** memory stack. **RPNCalc** also has 27 storage registers (**A..Z, & i**) with indirect (**i**) addressability. All registers and the display are automatically saved when exiting **RPNCalc** and restored when **RPNCalc** is activated. **RPNCalc** also allows the user to cut and paste data between applications.

To learn how to use Help press F1.

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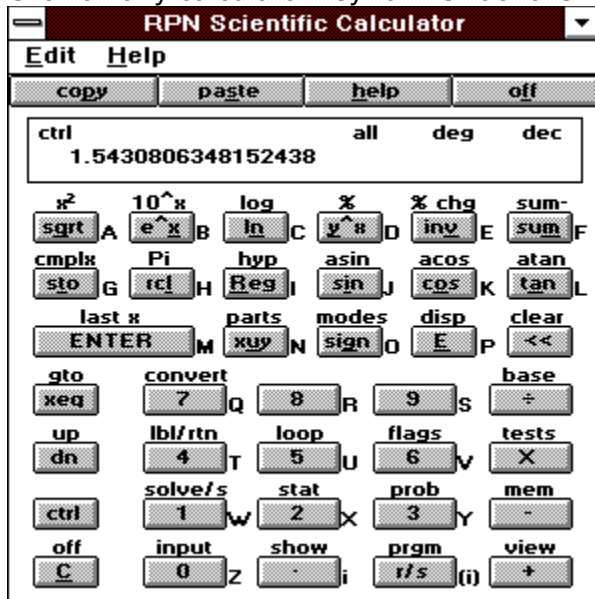
[Statistics](#)

**Probability Functions...**

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## The Keyboard

Click on any calculator key for instructions.




## Copy Displayed Value to the Clipboard

To copy the currently displayed value to the clipboard for use in other programs, press



or press the **p** key or choose **Edit Copy** from the menu.


## Paste Value from the Clipboard

To paste a value from the clipboard from other programs, press  or press the **s** key or choose **Edit Paste** from the menu.


## Obtaining Help

To access online help press  or press the **h** key or choose **Help** from the menu.

## Turning the Calculator Off

To turn the calculator off (quit the program), press  or press the **f** key. The calculator can also be turned off by pressing



 or by pressing the **Ctrl** key and then the **C** key. The latest state of the calculator, including display, registers, etc. is saved when the calculator is turned off.

## **Order the Programmable Version of RPNCalc**

To receive the programmable version of **RPNCalc** send \$19.95 + \$3.00 s/h to:

**Legacy Systems**

**P.O. Box 4146**

**Redondo Beach, CA 90278.**


**Or call (310) 540-6016 (24 hours) to order by credit card.**

\* Educational, Corporate, and Government P.O.s are accepted.

\* California residents add \$1.65 sales tax. \* C.O.D. add \$5.00 per order.



## Use Functions


Each key on the calculator has two functions: one which appears on the face of the key and a control function which appears above the key. To access the function which appears above the key first click on  or press the **Ctrl** key. Next to each key also appears a letter **A..Z**, **(i)**, **i**. The letters are used with the **sto**, and **rcl** functions to store variables. The letters **A..F** are also used for hexadecimal notation.


Related Topics

[Entering Numbers](#)


[Backspacing and Clearing](#)

## Backspacing and Clearing

Use  or press the backspace key to erase the last character entered or an entire completed number. Use

 or press the **C** key to clear the displayed number to zero. Use




 (**clear**) or press the **Ctrl** and backspace key to clear x, variables, all, or summation registers.

Related Topics

[Entering Numbers](#)

## Entering Numbers

In the decimal base, numbers of up to 15 digits can be keyed in with a four digit exponent of up to  $\pm 4999$ . A number is entered by keying in the number and then pressing  or by pressing the **Enter** key or by pressing a function key.

Related Topics


[Backspacing and Clearing](#)

[Entering Powers of 10](#)

[Changing the Sign of Numbers](#)

[Performing Arithmetic](#)

## Changing the Sign of Numbers




Press  or press the **g** key to change the sign of a number.

Related Topics






[Entering Numbers](#)

## Performing Arithmetic



### One number functions

To use a one number function such as ,  
, or  
  $x^2$ , key in the number and then press the function key. The result will be displayed.

### Two number functions

To use a two number function such as ,  
,  
, or  
, key in the first number and then press  
 or press the **Enter** key. Key in the second number and then press the function key. The result will be displayed.


**Example:** Calculate  $14 + 8$


Press: **14**  **8**  


Displayed Result: 22.000



Related Topics  
[Entering Numbers](#)  
[Memory Stack](#)

## Addition

To perform addition, key in the first number and then press  or press the **Enter** key. Key in the second number and then press

 or press the + key. The result will be displayed.

**Example:** Calculate  $14 + 8$

Press: **14**  **8**  


Displayed Result: 22.000



Related Topics

[Entering Numbers](#)



[Memory Stack](#)

[Performing Arithmetic](#)

## Subtraction

To perform subtraction, key in the first number and then press  or press the **Enter** key. Key in the second number and then press  or press the - key. The result will be displayed.

**Example:** Calculate  $12 - 7$

Press: **12**  **7**  


Displayed Result: 5.000



Related Topics

[Entering Numbers](#)



[Memory Stack](#)

[Performing Arithmetic](#)

## Multiplication

To perform multiplication, key in the first number and then press  or press the **Enter** key. Key in the second number and then press  or press the \* key. The result will be displayed.

**Example:** Calculate 9 X 11

Press: **9**  **11**  


Displayed Result: 99.000

Related Topics


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## Division

To perform division, key in the first number and then press  or press the **Enter** key. Key in the second number and then press

 or press the / key. The result will be displayed.

**Example:** Calculate  $45 \div 15$

Press: 45  15  


Displayed Result: 3.000


Related Topics

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## Square Root, Squaring

To find the square root of a number, key in the number and then press  or press the **q** key. The result will be displayed.

**Example:** Calculate the square root of 144

Press: **144** 

Displayed Result: 12.000

To square a number, key in the number and then press   or press the **Ctrl** key and then press the **q** key. The result will be displayed.

**Example:** Calculate 15 squared

Press: **15**   


Displayed Result: 225.000


Related Topics

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## sin, asin Functions

To find the sine of a number using the current angle mode, key in the number and then press  or press the **i** key. The result will be displayed.



**Example:** Calculate the sine of  $30^\circ$  with the calculator set to the deg angle mode

Press: **30** 

Displayed Result: 0.5

To find the inverse sine of a number using the current angle mode, key in the number and then press   or press the **Ctrl** key and then press the **i** key. The result will be displayed.

**Example:** Calculate the inverse sin of 0.5 with the calculator set to the deg angle mode

Press: **.5**  

Displayed Result: 30

Related Topics

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[Memory Stack](#)

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[cos, acos Function](#)

[tan, atan Function](#)


[sinh Function](#)

[cosh Function](#)


[tanh Function](#)

[Pi Function](#)



## cos, acos Functions

To find the cosine of a number using the current angle mode, key in the number and then press  or press the **o** key. The result will be displayed.



**Example:** Calculate the cosine of  $60^\circ$  with the calculator set to the deg angle mode

Press: **60** 

Displayed Result: 0.5

To find the inverse cosine of a number using the current angle mode, key in the number and then press   or press the **Ctrl** key and then press the **o** key. The result will be displayed.

**Example:** Calculate the inverse cosine of 0.5 with the calculator set to the deg angle mode

Press: **.5**   


Displayed Result: 60

Related Topics

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[sin, asin Function](#)

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## tan, atan Functions

To find the tangent of a number using the current angle mode, key in the number and then press  or press the **a** key. The result will be displayed.



**Example:** Calculate the tangent of  $45^\circ$  with the calculator set to the deg angle mode

Press: **45** 

Displayed Result: 1

To find the inverse tangent of a number using the current angle mode, key in the number and then press   or press the **Ctrl** key and then press the **a** key. The result will be displayed.

**Example:** Calculate the inverse tangent of 1 with the calculator set to the deg angle mode

Press: **1**   


Displayed Result: 45

Related Topics

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[sin, asin Function](#)

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## sinh Function

To find the hyperbolic sine of a number, key in the number and then press 



 or **Ctrl** key and then press the **R** key and then press the **i** key. The result will be displayed.

**Example:** Calculate the hyperbolic sine of 2

Press: 2 





Displayed Result: 3.627

Related Topics

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[sin, asin Function](#)

[cos, acos Function](#)

[tan, atan Function](#)

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## cosh Function

To find the hyperbolic cosine of a number, key in the number and then press 



 or **Ctrl** key and then press the **R** key and then press the **o** key. The result will be displayed.

**Example:** Calculate the hyperbolic cosine of 0.5

Press: 2 





Displayed Result: 1.128

[Related Topics](#)

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## **tanh Function**

To find the hyperbolic tangent of a number, key in the number and then press



or **Ctrl** key and then press the **R** key and then press the **a** key. The result will be displayed.

**Example:** Calculate the hyperbolic tangent of 2

Press: 2



Displayed Result: 0.964

Related Topics

[Entering Numbers](#)

[Memory Stack](#)

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[sin, asin Function](#)

[cos, acos Function](#)


[tan, atan Function](#)

[sinh Function](#)

[cosh Function](#)



## Exponential, Natural, Common

To find the natural exponential ( $e^x$ ) of a number, key in the number and then press  or press the **x** key. The result will be displayed.

**Example:** Calculate the natural exponential of -0.25

Press: **.25**   




Displayed Result: 0.7788

To find the common exponential ( $10^x$ ) of a number, key in the number and then press



 or press the **Ctrl** key and then press the **x** key. The result will be displayed.

**Example:** Calculate the common exponential of 5

Press: **5**   


Displayed Result: 100000

Related Topics


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[Logarithm, Natural, Common](#)

## Logarithm, Natural, Common

To find the natural logarithm (**ln**) of a number, key in the number and then press  or press the **n** key. The result will be displayed.

**Example:** Calculate the natural logarithm of 4

Press: 4 

Displayed Result: 1.386

To find the common logarithm (**log**) of a number, key in the number and then press



 or press the **Ctrl** key and then press the **n** key. The result will be displayed.

**Example:** Calculate the common logarithm of 100

Press: 100   


Displayed Result: 2

Related Topics



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
[Performing Arithmetic](#)

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## Power Function

To calculate a number **y** raised to the power **x** key in the first number and then press  or press the **Enter** key. Key in the second number and then press  or press the **y** key. The result will be displayed.

**Example:** Calculate 8 raised to the power of 3

Press: 8  3  


Displayed Result: 512.000

Related Topics

[Entering Numbers](#)

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## Percentage Function

To calculate **x** percent of **y**, key in the number to take the percentage of and then press

**ENTER**

or press the **Enter** key. Key in the percentage then press

**ENTER**

**Ψ x**

or press the **Ctrl** key and then press the **y** key. The result will be displayed.

**Example:** Calculate 15 percent of 200

Press: 200 **ENTER** 15  
**ENTER**  
**Ψ x**

Displayed Result: 30.000

Related Topics


[Entering Numbers](#)

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[Percent Change](#)

## Inverse Function

To find the inverse ( $1/x$ ) of a number, key in the number and then press  or press the **v** key. The result will be displayed.

**Example:** Calculate the inverse of 25

Press: **25** 

Displayed Result: 0.04

Related Topics

[Entering Numbers](#)

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## Percent Change Function

To calculate the percent change from **y** to **x**, key in the first number and then press

**ENTER**

or press the **Enter** key. Key in the second number then press

**ENTER**

**ENTER**

or press the **Ctrl** key and then press the **v** key. The result will be displayed.

**Example:** Calculate the percentage change of \$19.99 to \$26.99

Press: **19.99** **ENTER** **26.99**  
**ENTER**  
**ENTER**

Displayed Result: 35.02

Related Topics



[Entering Numbers](#)

[Memory Stack](#)



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[Percentage Function](#)

## Pi Function

To obtain the value of Pi to 17 digits press   or press the **Ctrl** key and then press the **I** key. Pi will be displayed.

**Example:** Put Pi in x register.

Press:  

Displayed Result: 3.1415926535897932


Related Topics

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## Exchange the X and Y Register Values

To exchange the **x** and **y** register values press  or press the **u** key. The value which was in the **y** register will be displayed and the value which was in the **x** register is now in the **y** register.

**Example:** Exchange the **x** and **y** register values where **x** = 3.14 and **y** = 2.2E-4.

Press: 

Displayed Result: 2.2E-4 (3.14 is now in the **y** register)

Related Topics



[Entering Numbers](#)

[Memory Stack](#)



[Reviewing the Memory Stack](#)



## Retrieving the LastX Register

The **LastX** register holds the number that was in the **x** register before the last numeric function was performed. To retrieve this value press   or press the **Ctrl** key and then press the **Enter** key.

**Example:** Retrieve the contents of the **LastX** register

Press:   


Displayed Result: Value of the **LastX** register


Related Topics

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## Reviewing the Register Stack

To review the **x**, **y**, **z**, and **t** register values press  or press the **R** key. The values in the registers are rolled into view, one register at a time. The value which was in the **y** register will be displayed. The value which was in the **z** register is now in the **y** register, the value which was in the **t** register is now in the **z** register and the value which was in the **x** register is now in the **t** register.

**Example:** Roll the **x**, **y**, **z**, **t** register values where **x** = 1, **y** = 2, **z** = 3, **t** = 4,

Press: 

Displayed Result: 2 (**y** register = 3, **z** register = 4, and **t** register = 1)


Related Topics


[Entering Numbers](#)

[Memory Stack](#)



[Exchange the X and Y Register Values](#)

## Storage Registers A..Z, (i)i, i

To use the storage registers to store values in memory press  or press the **t** key and then the key corresponding to the letter **A..Z, (i),** or **i**. To use the storage registers to recall values from memory press

 or press the **I** key and then the key corresponding to the letter **A..Z, (i),** or **i**.

**Example:** Calculate:  $14 + 8$  and store the result in register **J**.

Press: **14**  **8**  


Displayed Result: 22.000

Press:   


## Memory Stack

The memory stack consists of the **x**, **y**, **z**, **t**, and **last x** registers. The "oldest" number entered is in the **t** (top) register. The most "recent" number is in the **x** register which is also the number shown in the display. The contents of the stack automatically move up as new numbers are entered and down as operators combine two numbers to produce one number.

Related Topics

[Entering Numbers](#)

[Performing Arithmetic](#)

## Complex Numbers

Complex numbers are placed in the memory stack as sets of two double registers which consist of the **x** and **y** registers corresponding to the real and imaginary parts of the second number entered and the **z** and **t** registers corresponding to the real and imaginary parts of the first number entered i.e.  $Z2 = x + iy$ ,  $Z1 = z + it$ . The following functions may be used for complex numbers:

**ENTER**,  
**ENTER**,  
**ENTER**,  
**ENTER**,  
**ENTER**,  
**ENTER**,  
**ENTER**,  
**ENTER**,  
**ENTER**,  
**ENTER**,  
**ENTER**,  
**ENTER**,  
**ENTER**,  
**ENTER**, and  
**ENTER**. To use these operators for complex numbers first press  
**ENTER**, and then press  
**sto**.

**Example:** Calculate:  $(14 + 8i) + (22 + 2i)$

Press: **8** **ENTER** **14**  
**ENTER** **2**  
**ENTER** **22**  
**ENTER**  
**sto**  
**ENTER**


Displayed Result: 36.000 (the displayed result is the real part, the y register contains 10 which is the imaginary part)

Related Topics


[Entering Numbers](#)

[Performing Arithmetic](#)

## Summation Registers

There are six summation registers for performing statistical calculations. The summation registers consist of the **n** (accumulated data sets) register, the **x sum** register, the **y sum** register, the **x<sup>2</sup>** register, the **y<sup>2</sup>** and the **xy** register. To add a data set to the summation registers press  or press the **m** key. To remove a data set from the summation registers press



 or press the **Ctrl** key and then press the **m** key.


Related Topics

[Entering Numbers](#)

[Performing Arithmetic](#)

[Statistics](#)

## Entering Powers of 10


Press  or press the **E** key to enter a power of 10. A four digit exponent of up to  $\pm 4999$  can be entered.

Related Topics

[Entering Numbers](#)

## Changing the Display Format

Press 

 or press the **Ctrl** key and then press the **E** key to use the display dialog box to select **All**, **Scientific** or **Fixed** number formats.


Related Topics

[Entering Numbers](#)



## Changing the Number Base

Press 

 or press the **Ctrl** key and then press the  $\div$  key to use the base dialog box to select and convert between **Binary**, **Octal**, **Hexadecimal** or **Decimal** base formats.

Related Topics

[Entering Numbers](#)

## Changing the Angle Mode

Press

**ENTER**

**ENTER**

or press the **Ctrl** key and then press the **g** key to use the angle mode dialog box to select **Radians**, **Gradians**, or **Degrees** angle formats.

Related Topics

[Entering Numbers](#)

[Conversions](#)

## Conversions

Press

**ENTER**

**7**

or press the **Ctrl** key and then press the **7** key to use the convert dialog box to convert **Polar-Rect**, **Angle**, **Temperature**, **Mass**, **Length**, or **Time** values.


Related Topics

[Entering Numbers](#)

[Changing Angle Mode](#)

## Parts of Numbers

Press 

 or press the **Ctrl** key and then press the **u** key to use the parts dialog box to obtain the **Integer**, **Fractional**, **Rounded**, or **Absolute Value** part of a number.

Related Topics

[Entering Numbers](#)

## Statistics

Press

**ENTER**

**2**

or press the **Ctrl** key and then the **2** key to use the statistics dialog box to obtain statistics on numbers accumulated in the summation registers.


Related Topics

[Entering Numbers](#)

[Summation \(statistics\) Registers](#)

## Probability

Press 

 or press the **Ctrl** key and then press the **3** key to use the probability dialog box to obtain probability functions of numbers entered in the **x** and **y** registers. For permutations and combinations the **y** register is equivalent to **n** (entered first), the **x** register is equivalent to **r**. For factorials the **x** register contains the value to calculate the factorial of. For random numbers, the **x** register contains the seed value.

Related Topics

[Entering Numbers](#)

