

powerOne™ Personal

Version 2.1

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1 Getting Started

This section helps you get started using your *powerOne*™ calculator.

Input Mode

The first time the application is started, you are given the choice of which input mode you wish to use. If you are not sure which mode you want, choose Order of Operations mode - this is what most calculators use. You can easily change it later (see Calculator Settings).

The Displays

There are two main displays: the calculator and the templates. Additionally, several types of input screens are used to enter numeric, date or time values into the templates. The templates perform business and conversion computations, working with the input screen to enter variables and perform calculations.

Number Ranges

Entry of numbers with up to 12 decimal places and 14 digits is allowed. Numbers larger than this will display in scientific notation (e.g., 1.234e13). Numbers may be entered and displayed in normal, scientific notation or engineering notation.

Long Calculations

Depending on the speed of your device and the complexity of the calculation, some calculations may take a few seconds to complete. Generally in such cases, a dialog box containing "Calculating…" with a 'Cancel' button will be shown. You can stop the calculation by tapping and holding the cancel button.

The following sections contain further details about using the application on specific operating systems:

- Palm OS
- Pocket PC
- Windows

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1.1 Palm OS

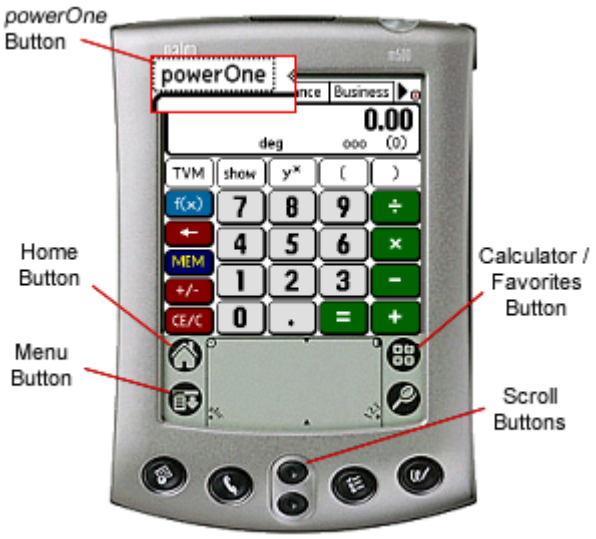
This section of the manual describes features of the software that are specific to Palm OS devices:

powerOne Button

The ***powerOne*** button, in the top left corner of the display, offers access to logging functions, online help, product information, and calculator preferences.

If the manual refers to the menu bar, you need to tap the menu button to make the menu bar visible.

In addition, this manual will refer to scroll arrows, scroll buttons, and scroll bars. Scroll arrows appear in the lower, right-hand corner of the screen or in the pop-up list. Scroll bars appear next to the data to be scrolled. In most cases, however, scrolling can be achieved using the scroll buttons shown above.



Setting the Default Calculator

Some PalmOS devices have a calculator or favorites button in the Graffiti area as shown above. To set a *powerOne* product as the default (which means that it will appear when you hit the button described above):

- Select the Home button
- Select the applications "Prefs"
- Select "Buttons" from the top-right corner pop-up list
- Change the name of the application next to the calculator or favorites button by choosing it from the pop-up list.

Skins

Skins add a personalized look to the main and input calculators. Some skins offer a different button layout, offering the advanced mathematics functions in drop down lists or giving access to programmable buttons, which can be changed in the preferences screen. Other skins offer different color schemes.

To download free skins, go to this product's web page at www.infinitysw.com.

Installing Skins

After downloading a skin from Infinity Softworks' web site and synchronizing it to your device's main memory, run the application. The skin will be imported automatically. To install a skin from an expansion card, select "Skins" from the "powerOne" button. Choose "Import" to find a skin on the expansion card.

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Changing Skins

To change skins, select "Skins" from the "powerOne" button. Choose the skin by selecting it with the stylus and then select "OK". The calculator display will change automatically. "<Default>" is the original display that came with your product.

Deleting Skins

To delete a skin, select "Skins" from the "powerOne" button. Choose the skin by selecting it with the stylus and then select "Delete".

Using Graffiti

Graffiti® entry is supported for both the main and input screens. To learn how to draw each character, see your handheld's user manual.

Character	Function	Character	Function
0	Zero	<back> <space>	Backspace
1	One	c	C/CE
2	Two	+	Add
3	Three	–	Subtract
4	Four	x *	Multiply
5	Five	/	Divide
6	Six	=	Equals/Enter
7	Seven	(	Lt Paren
8	Eight	)	Rt Paren
9	Nine	s	Store
. ,	Decimal Pt	r	Recall
n	Sign	<return>	Save
e	Exponent		

Note that the Graffiti shift indicator is in the view window both on the main and input screens.

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1.2 Pocket PC

This section of the manual describes features of the software that are specific to Pocket PC devices:



Help

Context sensitive help is available throughout the application by tapping the Windows start menu icon in the top left corner of the display, scrolling to the bottom of the Windows start menu and selecting "Help".

Menu Bar

When the manual refers to menu options, they are available in the menu bar shown above.

Keyboard Navigation

The keyboard can be used instead of the mouse for navigation.

Main Calculators

Keystroke	Function	Keystroke	Function
0	Zero	<Backspace>	Backspace
1	One	c/C	C/CE
2	Two	<delete>	C/CE
3	Three	+	Add
4	Four	–	Subtract
5	Five	*	Multiply
6	Six	/	Divide
7	Seven	=	Equals/Enter
8	Eight	<Enter> <return>	Equals/Enter
9	Nine	(	Lt Paren
. ,	Decimal Pt	)	Rt Paren
n/N	Sign	m/M	Memory
e/E	Exponent	f/F	Function Button

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Templates

Keystroke	Function
Scroll Arrows	Scroll through buttons/variables in the template.
<space>/<Enter>	Displays the data input screen for the chosen variable.
c/C	Calculates the chosen variable (if available – designated by a "?" in the right-hand column).
v/V	Displays the variable choices for the currently selected variable (if available – designated by a box surrounding the variable name).

Input Calculator Screen

In the number input calculator, button selections are the same as in the main calculator, except for the following:

Keystroke	Function
<Enter>/<return>	Saves the changes.
<Esc>	Cancels changes.

Time Selector

In the time selector, use scroll arrows or number buttons to change each the hour, minutes, seconds and am/pm designation.

Date Selector

Keystroke	Function
<Page Up> <Page Down>	Changes month.
<Ctrl><Page Up> <Ctrl><Page Down>	Changes year.

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1.3 Windows

This section of the manual describes features of the software that are specific to Windows computers. In addition, Windows systems have special features that other versions do not. This section details those differences:



Help

Context sensitive help is available throughout the application by selecting Help > Contents from the application's menu, F1 while in the application, or choosing "*powerOne* Personal Manual" from the StartàProgramsàpowerOne Finance for Windows menu.

Menu Bar

When the manual refers to menu options, they are available in the menu bar shown above.

Keyboard Navigation

The keyboard can be used instead of the mouse for navigation.

Main Calculators

Keystroke	Function	Keystroke	Function
0	Zero	<Backspace>	Backspace
1	One	c/C	C/CE
2	Two	<delete>	C/CE
3	Three	+	Add
4	Four	–	Subtract
5	Five	*	Multiply
6	Six	/	Divide
7	Seven	=	Equals/Enter
8	Eight	<Enter> <return>	Equals/Enter
9	Nine	(	Lt Paren
. ,	Decimal Pt	)	Rt Paren
n/N	Sign	m/M	Memory
e/E	Exponent	f/F	Function Button

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Templates

Keystroke	Function
Scroll Arrows	Scroll through buttons/variables in the template.
<space>/<Enter>	Displays the data input screen for the chosen variable.
c/C	Calculates the chosen variable (if available – designated by a "?" in the right-hand column).
v/V	Displays the variable choices for the currently selected variable (if available – designated by a box surrounding the variable name).

Input Calculator Screen

In the number input calculator, button selections are the same as in the main calculator, except for the following:

Keystroke	**Function**
<Enter>/<return>	Saves the changes.
<Esc>	Cancels changes.

Time Selector

In the time selector, use scroll arrows or number buttons to change each the hour, minutes, seconds and am/pm designation.

Date Selector

Keystroke	**Function**
<Page Up> <Page Down>	Changes month.
<Ctrl><Page Up> <Ctrl><Page Down>	Changes year.

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2 Using the Calculator

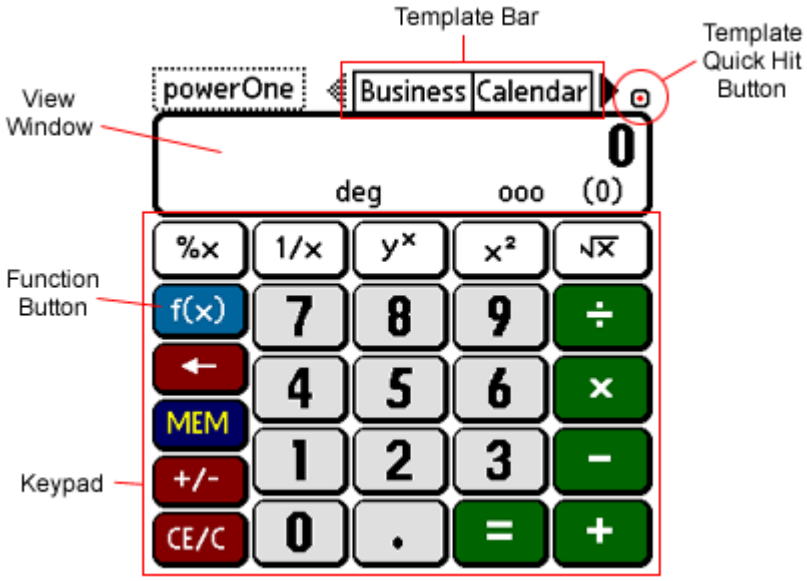
This section discusses the calculator display. The display is broken into four sections: the template bar across the top, the view window, the keypad and the menu:

Each section is outlined below.

View Window

The view window shows both entered and calculated values. In addition, it shows certain status indicators:

- **Clear:** displays 'clear' when the current value has been cleared during an arithmetic operation. See the section on CE/C for more information.
- **Trig. Mode:** displays current trigonometry mode - 'deg' for degrees, 'rad' for radians.
- **Display Mode:** displays 'eng' when in engineering display mode, 'sci' when in scientific display mode.
- **Input Mode:** displays the current input mode - 'ooo' for order of operations and 'chain' for chain mode. See the section on Calculator Settings for more information.
- **Parentheses:** displays the number of open levels of parentheses. See the section on parentheses for more information.



Template Bar & Template Quick Hit Button

The template bar offers quick access to templates within the application. See Using the Templates for more information on navigation. Tapping the arrows left or right scrolls more templates into view while tapping the template quick-hit button displays all available template categories at one time.

Function Button

Beyond the basic arithmetic functions available on the keypad, the most commonly used math, trigonometric and statistics functions are supported via lists accessible through the function button. This button is labeled "f(x)".

Programmable Buttons

The programmable buttons are preset with commonly used functions, but you may reprogram them in the Preferences to other functions or even to quickly access a template of your choice. See the calculator preferences screen (see Calculator Settings).

Keypad

The keypad is a series of buttons that allow for rapid entry of numbers and commonly used mathematical

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functions. This keypad, in general, is broken into four sections. In the center of the keypad are the common number keys. The right-hand side contains standard math functions. Along the top are advanced functions and the left-hand side of the display contains functions for memory and number manipulation (backspace, sign change and clear). See their respective sections for more information.

Menus

Palm OS Devices

Choosing the menu button to the lower, left-hand corner of the Graffiti input area accesses the menus. Standard PalmOS edit choices, Graffiti help, Preferences, and application information can be accessed from here.

The Edit menu:

Function	Shortcut	Comments
Copy	/C	Copies the selected text to the clipboard.
Paste	/P	Pastes the selected text from the clipboard to the entry field.
Keystroke Help	/O	Displays information about Graffiti keystrokes.
Graffiti Help	/G	Help with Graffiti keystrokes.

The Options menu:

Function	Shortcut	Comments
Preferences	/R	Displays the calculator preferences.
About…		Displays company information.

Copy, paste, error and keystroke help, preferences and the about screen can all be reached from the powerOne button as well.

Pocket PC Devices

The menu bar at the bottom of the display contains the menus available while using the calculator. Standard edit choices, calculator settings and application information can be accessed from here.

The File menu:

Function	Comments
Options	Displays the calculator settings.
Calculation Log	Displays the log of recent calculations.

The Edit menu:

Function	Comments
Copy	Copy the selected text to the clipboard.
Paste	Paste the selected text from the clipboard to the entry field.

Help is available by tapping the Windows Start menu in the top left corner of the display and scrolling down to

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the "Help" entry at the bottom of the list.

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2.1 Performing Arithmetic

Functions are available either on the screen or from the list displayed when the "f(x)" button is selected. Select that button to display the list. Other buttons function as standard calculator buttons.

The following sections contain further details:

- Input Mode
- Entering Numbers
- Mathematics
- Parentheses
- Memory

2.1.1 Input Mode

This calculator can be used in standard or "order of operations" mode and chain input mode.

The input mode affects how calculations containing two variable functions are evaluated:

Order of Operations Input Mode

This is the input mode used by many scientific calculators. In this input mode the calculator obeys what is called the "order of operations" whereby each two variable operation is assigned a priority as follows (single variable operations are performed immediately):

The following chart outlines precedence:

Order	**#Function**
1	Negative (-x)
2	Powers and roots
3	Multiplication, division, and percentages
4	Addition and subtraction
5	Relationship operations (>, <=)
6	Logic or boolean operations (or, and)

To perform a computation, enter alternating values and functions, ending by tapping equals [=] to calculate. To calculate 27 + 3 x 8.5:

Key	**Display**	**Comments**
C/CE	0	Tap twice to clear the display
27	27	
+	27.00	
3	3	

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x	3	
8.5	8.5	
=	52.5	i.e. 27 + (3 x 8.5)

The number of decimal places displayed depends on the decimal setting. See the section on Calculator Settings, page 15, for more information.

Chain Input Mode

This is the input mode used by many business calculators. In this input mode math is performed by alternating chains of values and operations, each operation is evaluated as it is entered.

To perform a computation, enter alternating values and functions, ending with an equals to calculate. To calculate 27 + 3 x 8.5:

Key	Display	Comments
C/CE	0	Tap twice to clear the display
27	27	
+	27.00	
3	3	
x	30.00	
8.5	8.5	
=	255.00	i.e. 27 + 3 = 30, 30 ´ 8.5 = 225

2.1.2 Entering Numbers

To enter a number, tap the corresponding keypad button (0-9, decimal point, or sign).

To enter -356.96, for instance, do the following:

Key	Display	Comments
C/CE	0	Tap twice to clear the display
3	3	
5	35	
6	356	
. or ,	356.	Depends on the number format
9	356.9	
6	356.96	
+/–	-356.96	

The decimal point can either be displayed as a period or as a comma. This depends on the number format mode used. See your Palm device owner's manual for more details.

The following are number entry functions:

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Operation	Example	Comments
Number	0-9	Number pad items
Decimal point	. or ,	Depends on the number format
Sign	+/–	
Exponent	e or EE	Exponential notation

To enter a number in Exponential Notation, enter the mantissa then enter the exponent.

For example, to enter -1.29e-54 do the following:

Key	Display	Comments
C/CE	0	Tap twice to clear the display
1.29	1.29	
EE	1.29e	Tap f(x), then "number", and then EE
+/–	1.29e-	
54	1.29e-54	
+/–	-1.29e-54	

The Backspace (←) button allows for editing of numbers as they are entered. Tapping this button removes the last digit entered (i.e., 54.32 becomes 54.3).

Tapping the Clear Entry/Clear (CE/C) button once clears only the currently entered number. Tapping it a second time clears the entire computation.

2.1.3 Mathematics

Math functions are either one or two variable. Two-variable math, such as add, subtract, multiply and divide, take two variables to compute. One-variable functions, such as square root and reciprocal (1/x), need only one variable to calculate. Many math functions are visible on the screen. Others can be accessed via the f(x) function button.

One Variable Functions

Multiple one-variable math functions are supported, including square root, x-squared, and reciprocal. These functions use only the value in the main view window. For example, to calculate the square root of 8 (order of operations or chain mode):

Key	Display	Comments
C/CE		Tap twice to clear the display
8	8	
√x	2.83	

The following are examples of one-variable math functions:

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Operation	Example	Keystroke	Answer
Last		[f(x)] [number] [last]	
		Recalls the last calculated answer	
Logarithm	log(8)	8 [f(x)] [math] [log]	0.90
Natural anti-log or Exponential	e^2	2 [f(x)] [math] [e^x]	7.39
Natural Log	ln(4)	4 [f(x)] [math][ln]	1.39
Percent	15%	15 [f(x)] [math] [%x]	0.15
Power of 10	104	4 [f(x)] [math] [10x]	10,000
Reciprocal	1/5	5 [f(x)] [math] [1/x]	0.20
Show		[f(x)] [number] [show]	
		Shows all available decimal places	
Square	8^2	8 [f(x)] [math] [x^2]	64.00
Square root	√8	8 [f(x)] [math] [√x]	2.83
Trig Functions	sin(30)	30 [f(x)] [trig] [sin]	0.50

Two-Variable Functions

Multiple two-variable math functions are supported, including basic math, power and percentage change.

Two Variable Functions:

The following are examples of two-variable functions. These functions are the same when used in order of operations and chain input modes:

Operation	Example	Keystroke	Answer
Addition	8 + 3	8 [+] 3 [=]	11.00
Division	8 ÷ 3	8 [÷] 3 [=]	2.67
Multiplication	8 x 3	8 [x] 3 [=]	24.00
Percent	15% of 350	350 [x] 15 [%x] [=]	52.50
Percent add-on	22.95 + 6% sales tax	22.95 [+] 6 [%x] [=]	24.33
Percent discount	39.99 less 10%	39.99 [–] 10 [%x] [=]	35.99
Percent ratio	9 is what percent of 25	9 [÷] 25 [%x] [=]	36.00
Power	3^4	3 [f(x)] [math] [y^x] 4 [=]	81.00
Root	3√8	8 [f(x)] [math] [^{y}√x] 3 [=]	2
Subtraction	8 – 3	8 [–] 3 [=]	5.00

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2.1.4 Parentheses

To force evaluation of functions in a specific order (when in order of operations or chain input mode), use parentheses. Any operation enclosed in parentheses is calculated before the operations outside the parentheses.

To view intermediate results, tap the right parenthesis for each left parenthesis until the parenthesis indicator shows "(0)". Note that the parenthesis indicator in the view window changes to reflect the number of left parentheses in use.

2.1.5 Memory

There is a single memory location, plus the system clipboard. To access the memory location, use the 'MEM' button. To access the system clipboard, use Copy and Paste from the edit menu or by selecting the *powerOne* button.

Memory Locations

To store to a memory location, enter the number, select "MEM", and finally "Store". To recall the value, select "Recall". To clear the memory location, choose "Clear".

System Clipboard

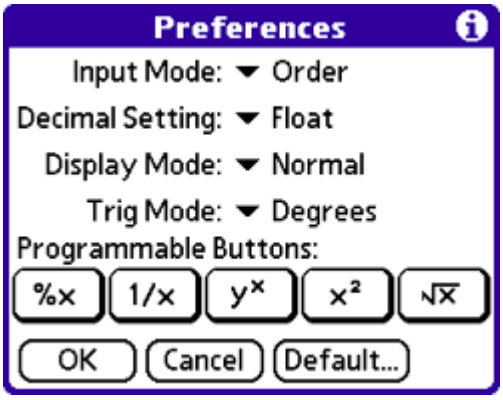
The system clipboard allows numbers to be moved from one application to another. To store to the system clipboard, enter the number then select copy from the edit menu or powerOne button. Recall information from the system clipboard by selecting paste from the same location.

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2.2 Calculator Settings

The Preferences or Options screen sets preferences for the main and input calculators. The templates have their own preferences, detailed in the section on Using the Templates.

To access the calculator settings, go to the main calculator display and then, on Palm OS devices, choose "Preferences" from the powerOne button or "Preferences" from the "Options" menu. On Pocket PC devices, choose "Options" from the "File" menu.



Input Mode

Set the desired input mode by choosing a setting from the popup list. There are three possible input modes:

- Order of Op.**:** selects order of operations mode.
- Chain**:** selects chain mode.

See Input Mode for details on each mode.

Decimal Setting

Set the displayed decimal places by choosing a setting from the pop-up list. There are thirteen possible decimal place settings:

- **Float:** shows all available decimal places.
- **0-11:** shows that many decimal places.

In addition, the show function displays all available decimal places until the next entry is made. This can be used to quickly see all available decimal places when the decimal setting is not set to float.

In engineering display mode the decimal setting controls the number of significant digits displayed rather than the number of decimal places: the number of significant digits displayed is 1+ the decimal setting.

Display Mode

There are three display modes: normal, scientific and engineering. In normal mode, numbers appear as they are entered. In scientific mode, numbers are always displayed in scientific notation and likewise, in engineering mode numbers are always displayed in engineering format.

Trig Mode

Trigonometric functions can be used in either degrees or radians mode. Choose which mode by selecting one of the two. In radians mode, 'rad' will appear in the lower part of the view window, otherwise 'deg' will appear (note that no trig indicator is displayed in algebraic entry mode).

Programmable Buttons

Depending on the calculator skin in use (Palm OS only), the calculator has several programmable buttons that may be set to any function or template within the application. To set a button, tap it to show a pop-up list of available functions and templates. Select a function from the list and that function is set to the button. The available items include functions and all templates. To access the template list choose "template" from the bottom of the list that pops up when you select a button. After selecting a template you will be given the option of setting a short name that will appear on the button.

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Default Settings

To return the preferences to their default settings, choose the Default button next to Done. Note that the Input Mode does not change.

2.3 Calculation Log

The calculation log displays computations as they are entered, which makes double-checking easier.

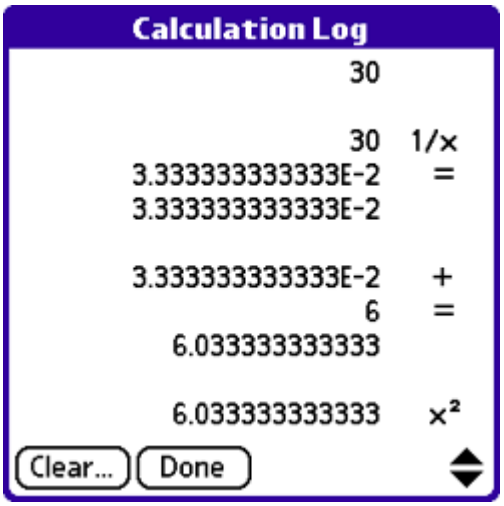
You can view the log by:

- *Palm OS* devices - tap 'powerOne' on the main calculator and select 'Calculation Log'.
- *Pocket PC* devices - from 'File' on the menu bar of the main calculator, select 'Calculation Log...'.
- *Windows* computers - from 'File' on the menu bar of the main calculator, select 'Calculation Log...'.

To scroll the list, choose the scroll arrows or scroll buttons.

For Pocket PC and Palm OS, the calculations log holds the last 20 computations.

For Windows, the last 500 computations are stored.



2.4 Structure of the Function List

The "func" [f(x)] function button displays all available math functions. These functions are broken into categories for faster access, as follows:

Math	Number	Trigonometric (trig)
Percent Change [%x]	Exponential notation [EE]	Trigonometirc functions [sin, cos, tan]
Reciprocal [1/x]	Show	Arc-trigonometric functions [asin, acos, atan]
Power [y^x]	Last	Hyperbolic function [sinh, cosh, tanh]
Root [$\sqrt[y]{x}$]	Pi (constant equal to 3.14159...)	Arc-hyperbolic functions [asinh, acosh, atanh]
X-Squared [x^2]	Left Parenthesis [( ]	
Square root [$\sqrt{x}$]	Right Parenthesis [ )]	
Natrual Log [ln]		
Anit-Log [e^x]		
Logarithm [log]		
Power of 10 [10^x]		

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3 Using the Templates

Templates are used to perform financial, conversion, date, and statistics computations. This section details their general use. See the section on each template for details on that specific computation. Finally, see the appendix for information on errors.

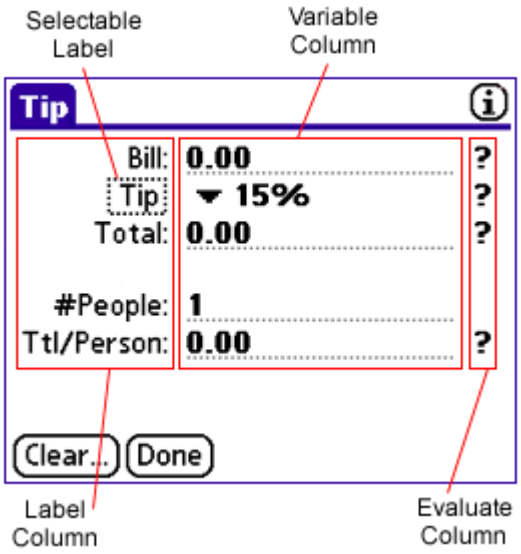
Accessing the Templates

To access a template, choose a category from the template bar in the top, right-hand corner of the display. This list scrolls right and left with the scroll arrows. For faster access, choose the template quick hit button to the right of the template bar. This will list all template categories within the application.

Template Layout

All templates are similar in nature:

- Each template has a **Clear** button (on Pocket PC this is the "C" icon in the menu bar) which sets the data back to its default values.
- Each template has notes explaining how the it is used. The notes are accessed through the "i" icon (on Pocket PC this is the "i" icon in the menu bar).
- To exit the template, select "Done" or "OK".
- The templates contain a menu allowing values to be exported and the settings to be changed. See Template & Variable Settings for details.



Templates contain data in a columnar form as follows:

The first, or label, column contains the names of the variables. The second column contains the current value of the variable. To enter a value, tap on the value column and enter it in the input screen. The third, or evaluate, column contains "?" buttons next to variables that can be calculated. To compute a value, tap the "?" button next to the variable to be computed.

Some templates offer multiple methods of looking at the same variable. In such cases, a box appears around the variable's label. For example, in the Tip template (shown above), the tip can either be an amount ("Tip$"), a percentage selected from a pop-up list ("Tip"), or a manually entered percentage ("Tip%").

3.1 Entering Data

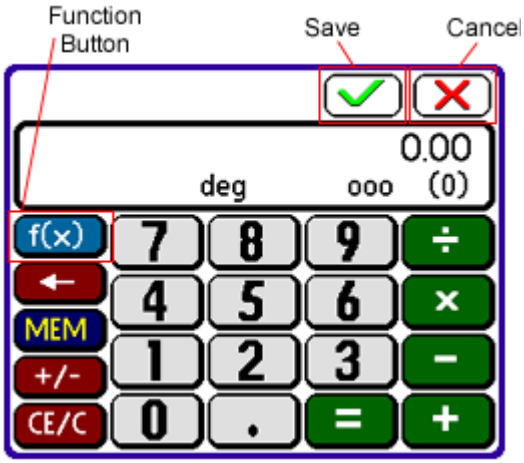
In the templates, values are entered using the number input screen, data editor screen, date selector, or time selector, depending on the type of data requested. The date and time selectors are standard to the operating system on your device, used in applications such as the calendar and to do list. The number input and data selector screens are native to the powerOne line of calculators.

Number Input Screen

The number input screen is used to enter numerical values in the templates.

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When a value is selected, that value appears in the input screen:



The keyed function buttons work similar to those in the main calculator. All the functions available in the main calculator are available to the input calculator through the "f(x)" function list button. Entries made in the main calculator are separate from the input screen except for the memory, which provides a simple way of sharing values between the calculator and templates.

To store the value in the input screen back to the template tap the "✓" or save button.

To return to the template without saving, tap the "x" or cancel button.

Date Selector

The date selector is used to enter dates.

On Palm OS devices, scroll the year with the left-right scroll arrows or change it by clicking and entering the value with Graffiti input, and select a month and day to return to the template.

On PocketPC & Windows, use the left-right scroll buttons to change the month, select the year and use the up-down scroll buttons or keypad to change its value, and select a day to return to the template.

Time Selector

The time selector is used to enter times.

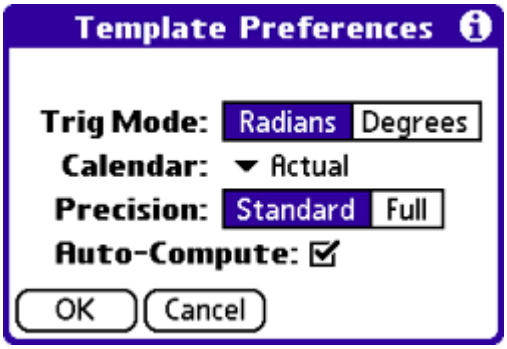
On Palm OS devices, change the hours and minutes by selecting the value and using the scroll arrows and then selecting AM or PM.

On PocketPC & Windows, use the keyboard to change the hours and minutes and select the AM/PM to change it.

3.2 Template & Variable Settings

Template Settings

Each of these settings refer to the currently selected template.



- **Trig Mode:** allows trigonometric operations to be done in either degree or radian mode if it is not defined by the template.
- **Calendar:** allows date arithmetic to be performed using an actual, 30/360, actual/360 or actual/365 calendar. Some templates allow for this change directly in the template itself.
  The "actual" day count method counts the actual number of days in a month (even allowing for leap years) and the total number of days in a year.
  The "actual" day count method counts the actual number of days in a month (even allowing for leap years) and the total number of days in a year.
  The 30/360 method treats all months as though they have 30 days and years as though they have 360

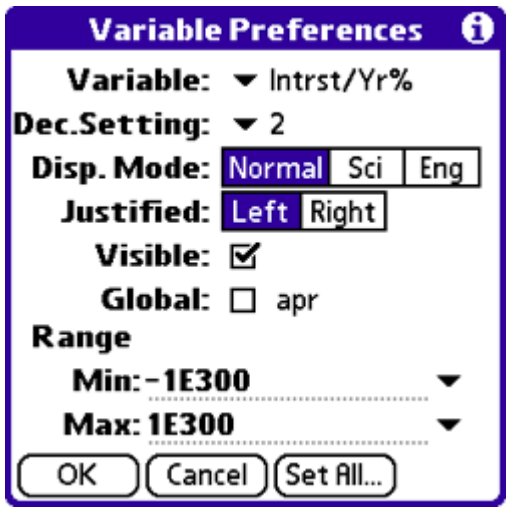
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days.
The actual/360 method counts the actual number of days in a month, but treats years as though they have 360 days.
The actual/365 method counts the actual number of days in a month, but treats years as though they have 365 days.
These different day count methods are sometimes refered to as "basis" or "day count basis" and are frequently used in financial calculations.

- **Precision:** some calculations require an iterative search for the answer (e.g., TVM interest rates) and take more than 1 second to calculate. When this occurs, a Computing dialog will appear. Precision affects the time of the calculation. Setting it to Full will calculate until full precision is reached. Setting it to Standard will only calculate to the displayed decimal places. Full precision takes longer to calculate but is more accurate than standard precision.
- **Auto-Compute:** when checked, the application will automatically determine when the "?" should be visible. When a value is entered into the template, a "?" will appear next to any other variable which may be affected by the change. When a value is recomputed, the question marks will disappear. While this is checked, any other values that can automatically be recalculated will be after each change.
  For example, if a template contains just two variables (such as most conversion templates), changing the value of one variable will automatically cause the other variable to be recalculated. If unchecked, the compute "?" will remain visible at all times, and values will only be recalculated when you tap their "?" button.

Variable Settings

Each of these preferences refer to the variables within the currently selected template. To set the preferences for a variable, first choose it from the Variable pop-up list. Selecting "Set All" will set all the variables to the current variable's preferences.



- **Variable:** the variable to set.
- **Dec Setting:** sets the displayed decimal places - float mode displays all available decimal places, 0-11 sets the decimal places to that number of places.
- **Disp. Mode:** numbers can be displayed in normal mode, scientific notation or engineering notation. See Calculator Settings for details.
- **Justified:** show the value left or right justified on the display.
- **Visible:** shows the variable if checked. A variable which is hidden will not be recalculated, even if Auto-Compute is checked.
- **Global:** if checked, allows the value of the variable to be shared with other templates. The equation variable is listed next to the 'Global' check box. In some cases this will be different than the displayed variable name (shown at the top of the page next to the 'Variable' label). For this variable to be with other templates, the other templates must contain the equation variable exactly as shown. In the example shown, checking the 'Global' box and using 'Interest' as a variable name in other equations will share this variable between templates.
- **Range:** available if the variable requires an iterative search to calculate its value. The range is the maximum and minimum starting points for calculation. The closer these are, the faster and more accurately a value can be derived. For more on iterative solving, see How the Solver Works.

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3.3 How the Solver Works

The solver uses an iterative method to balance an equation and determine an answer, relying on a minimum and maximum guess to "bracket" the answer. An equation is said to be in balance when, tabulated, the value to the left of the equals sign is the same as the value to the right of the equals sign.

In its simplest form, an iterative solver determines a mid-point between a maximum and minimum guess and evaluates the equation at all three points. It then decides which two points the equation is between – the mid-point and minimum guess or mid-point and maximum guess – and calculates a new mid-point based on those two points. It continues this cycle until it "guesses" the right answer. While *powerOne* Finance's solver is more advanced than this, it is similar in nature.

When performing an iterative calculation, a Computing dialog appears. Guesses made by the solver flash on the screen. If the "Cancel" button is selected, the answer will return as the last guess.

To speed execution and increase the likelihood of an answer, change the max and min range settings in the Variable Preferences. In some cases, the solver can calculate an answer directly without iterating to an answer. In this case, max and min range settings are not available.

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4 Included Templates

To access a template, choose a category from the template bar in the top, right-hand corner of the display. This list scrolls right and left with the scroll arrows. For faster access, choose the template quick hit button to the right of the template bar. This will list all template categories within the application. The following templates are supplied with the application, listed by category:

Business

- Discount
- Markup
- Percent Change
- Profit Margin
- Sales Tax
- Tip

Calendar

- Date
- Time

Add-on Calculation Templates

Additional template sets can be added from Infinity Softworks' web site. These template sets are free upon registration. For more information, see "Other Calculations" by selecting the powerOne button in the application.

Multiple template sets may be installed on powerOne Personal+, however powerOne Personal is limited to one additional template.

To delete the add-on templates, enter any template in the set, select the menu button, and choose "Delete Template Set" from the Template menu.

See below for specific steps on installing template sets on your device.

Palm OS

Up to 13 additional template sets can be installed on the Palm OS version of powerOne Personal+. After downloading a template set from the Infinity Softworks' website, use the Palm Install tool on your desktop computer to install it to your device (note that you must install it to the main memory on your device). Next time you start powerOne Personal, the application will detect and install the template set, which will appear in the category bar at the top of the display.

Pocket PC

The number of template sets that can be installed on the Pocket PC version of powerOne Personal+ is mostly limited by available memory. After downloading a template set from the Infinity Softworks' website, and with your Pocket PC device in its cradle, drag the downloaded file onto the 'Mobile Device' icon in Windows Explorer or the folder on your desktop used for exchanging files with your Pocket PC.

Next, on your Pocket PC, select powerOne Personal and tap 'Import Template Sets...' under the 'File' menu of

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the main calculator. A dialog will appear containing a list of the template set(s) you downloaded, select the one you want to install. The template set should appear in the category bar at the top of the display.

Windows

The number of template sets that can be installed on the Windows version of powerOne Personal+ is mostly limited by available memory. After downloading a template set from the Infinity Softworks' website, open powerOne Personal and drag the downloaded file onto the calculator window. The template set will now be available from the template bar.

4.1 Business Templates

4.1.1 Discount

This template performs discount computations:

- **Price:** current price.
- **Sales Price:** sales price.
- **Discount%:** percentage discount. For example, a 30% discount would be entered as "30".



Example

To perform this computation, choose Discount from the template menu on the main screen. The coupon is for 10% off the original cost. What is the discounted price if the cost is $9.99?

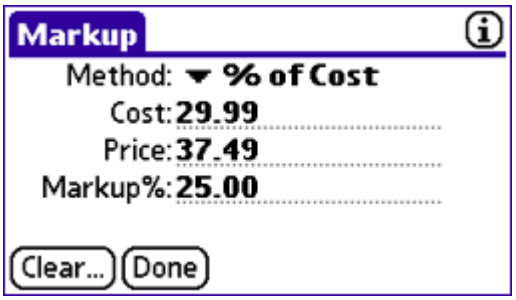
Variable	Enter	Comments
Clear…		Sets the display to its default values
Price	9.99	
Discount%	10	

Compute the price by selecting "?" on the same line. The sales price is $8.99.

4.1.2 Markup

This template performs markup computations:

- **Method:** computation based on price or cost. Profit margin computations are based on price; percent change computations are based on cost.
- **Cost:** the cost to manufacture or purchase.
- **Price:** the selling or resale price.



- **Markup%:** the markup expressed as a percentage. For example, an 8.125% change would be entered as "8.125". A positive value represents an increase while a negative one represents a decrease.

Example

To perform this computation, choose Markup from the template menu on the main screen. The clothing is sold

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at a 25% markup on cost. What is the price if the cost is $29.99?

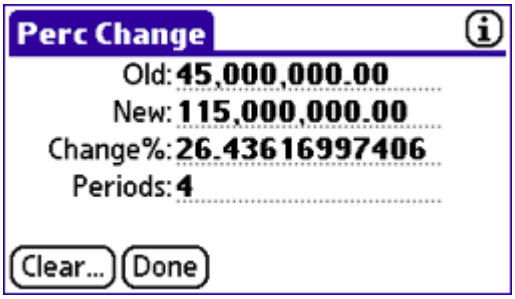
Variable	Enter	Comments
Tap the Clear… button		Sets the display to its default values
Method	% of Cost	
Cost	29.99	
Markup%	25	

Compute the price by selecting "?" on the same line. The price is $37.49.

4.1.3 Percent Change

This template performs percentage change computations with one or more compounding periods:

- **Old:** the old value.
- **New:** the new value.
- **Change%:** the percentage changed per period. For example, an 8.125% change would be entered as "8.125". A positive value represents an increase while a negative one represents a decrease.
- **Periods:** the number of periods.



Percent change set to one period and markup as a percentage of cost are identical computations.

Example

To perform this computation, choose Percent Change from the template menu on the main screen. Over 4 years, sales increased from $45 million to $115 million. The industry average is 20% increase per year. How does your company compare?

Variable	Entry	Comments
Clear…		Sets the display to its default values
Old	45,000,000	
New	115,000,000	
Periods	4	

Compute the percent change by selecting "?" on the Change% line. Sales have increased 26.44% per year, comparing favorably to the 20% industry pace.

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4.1.4 Profit Margin



This template performs profit margin computations:

- **Cost:** the cost to manufacture or purchase.
- **Price:** the selling or resale price.
- **Margin%:** the gross profit margin expressed as a percentage. For example, an 8.125% change would be entered as "8.125". A positive value represents an increase while a negative one represents a decrease.

Profit margin and markup as a percentage of price are identical.

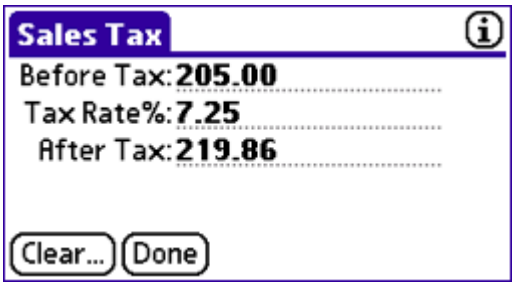
Example

To perform this computation, choose Profit Margin from the template menu on the main screen. Your division contributes $724,500,000 in revenue. The costs associated with revenue are $580,000,000. What is the profit margin?

Variable	Entry	Comments
Clear…		Sets the display to its default values
Cost	580,000,000	
Price	724,500,000	

Compute the profit margin by selecting "?" on the Margin% line. The profit margin is 19.94%.

4.1.5 Sales Tax



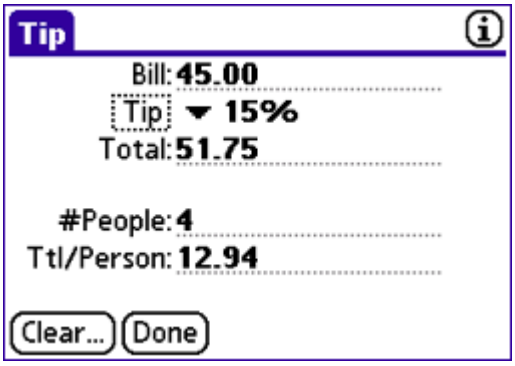
This template performs sales tax computations:

- **Before Tax:** before tax amount.
- **Tax Rate%:** tax rate expressed as a percentage. For example, a 6% tax rate would be entered as "6".
- **After Tax:** after tax amount.

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4.1.6 Tip

The tip template computes tip, total bills, and performs bill-splitting functions.



- **Bill:** the bill amount before tip.
- **Tip/Tip%/Tip$:** "Tip" allows a percentage to be chosen from the pop-up list. "Tip%" allows a tip percentage to be manually entered. "Tip$" allows a tip amount to be shown or entered.
- **Total:** the total amount including the tip.
- **#People:** the number of people paying for the meal.
- **Ttl/Person:** the total per person, split evenly among the people paying for the meal.

The tip computation calculates from the top, down. In other words, to calculate the tip amount, it will first attempt to use Bill, then Total, and finally Ttl/Person to calculate. It knows to use a value when the variable is not zero. If Bill is 0, for example, it will use Total.

Examples

Tip Calculation 1

To perform this computation, choose Tip from the template menu on the main screen. At a team business lunch, your four person team (including you) goes to lunch. The total bill is $45. With a 15% tip, what should each person contribute?

Variable	Enter	Comments
Tap the Clear… button		Sets the display to its default values
Bill	45	
Tip%	15	
#People	4	

Compute the total by selecting "?" on the same line. The total is $51.75 and each person should contribute $12.94 (Ttl/Person).

Tip Calculation 2

For the example above, the company will pay the entire bill instead. What is the tip and the total bill?

Compute the tip amount by tapping on "Tip%" and selecting "Tip$" and then selecting "?" on the same line. The tip comes to $6.75. As before, the total bill is $51.75.

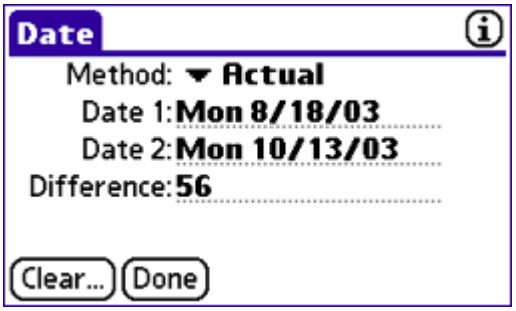
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4.2 Calendar

Calendar computations include both date and time computations.

Date Calculations

Dates can be computed using an actual calendar year, the 30/360, actual/360 or actual/365 day-count method.

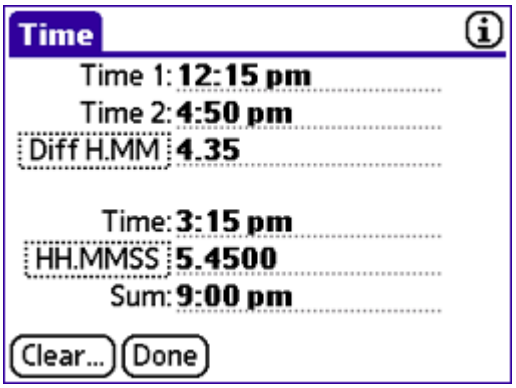


- **Method:** the day-count method - see Template Settings.
- **Date 1:** the date to compute from.
- **Date 2:** the date to compute to.
- **Difference:** the difference in number of days.

Time Calculations

Times are displayed in either standard (am/pm) or 24-hour format, depending on the localized time format set in the device's system settings (see your device manual for details).

The top section of the template performs time difference calculations:



- **Time 1:** the beginning time set in increments of 5 minutes.
- **Time 2:** the ending time set in increments of 5 minutes.
- **Diff H.MM/Diff Hrs:** the difference between the two times. "Diff H.MM" displays in hour-minute format (5 hrs, 45mins would display as 5.45). "Diff Hrs" displays as fraction of an hour.

The bottom section performs time addition calculations:

- **Time:** starting time.
- **HH.MMSS/HrsFrac:** time duration. "HH.MMSS" displays time in hour, minute, second format (4hrs, 7mins, 30sec would display as 4.0730). "Hrs.Frac" displays time as a fraction of an hour.
- **Sum:** the end time.

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Examples

Date

Go to the Calendar – Date template to compute this problem. Vacation begins on October 13, 2003. Today is August 18, 2003. How many actual days until vacation?

Variable	Enter	Comments
Tap the Clear… button		Sets the display to its default values
Date 1	8/18/03	Enter August 18, 2003
Date 2	10/13/03	Enter October 13, 2003

Compute the difference in days by selecting "?" on the "Difference" line. There are 56 days until vacation.

Time Difference

Go to the Calendar – Time template to compute this problem. When billing time, the project began at 12:15pm and concluded at 4:50pm. If you bill at $30 per hour, how should you bill?

Variable	Enter	Comments
Tap the Clear… button		Sets the display to its default values
Time 1	12:15pm	
Time 2	4:50pm	

Make sure Diff Hrs is showing instead of Diff H.MM. Compute the difference by selecting "?" on the same line. This project took 4.5833 hours (4 hours, 35 minutes). To finish the calculation, select the Diff Hrs value and multiply by 30. You should bill $137.50 for your work.

Time Sum

Go to the Calendar – Time template to compute this problem. If you start driving at 3:15 pm and the trip will take 5hrs, 45mins, what time will you arrive?

Variable	Enter	Comments
Tap the Clear… button		Sets the display to its default values
Time	3:15 pm	
H.MMSS	5.45	

Compute the sum by selecting "?" on the same line. You will arrive at 9:00pm.

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5 Appendix

The appendix contains additional information pertinent to the use of the product. The following may be helpful:

- Error Cases
- Contacting Infinity Softworks

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5.1 Error Cases

Error messages appear when calculations cannot be successfully completed. This section documents the cases where error messages occur:

Mathematical Errors

- Overflow or underflow occurs in the calculation.
- Divide by 0.
- Reciprocal when x = 0.
- Square root when x < 0.
- Natural log when x <= 0.
- Used too many levels of parentheses.
- Entered a number outside the range of 1e-308 to 1e308 and
- -1e–308 to –1e308.

Templates

- General math errors.

Calendar – Date

- Trying to calculating a date that is outside the supported range of January 1, 1900 to December 31st, 3000.

Markup: %Cost or Markup

- Calculating Markup when Cost = 0 and method is set to "% of Cost".
- Calculating Markup when Price = 0 and method is set to "% of Price".
- Calculating Cost when Markup = –100 and method is set to "% of Cost".

Discount

- Calculating Discount when Price = 0.
- Calculating Price when Discount = 100.

Markup: Price, Margin, Profit Margin

- Calculating markup when price = 0.
- Calculating price when markup = 100.

Sales Tax

- Calculating tax rate when before tax = 0.

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5.2 Contact Infinity Softworks

Web: www.infinitysw.com

Email: support@infinitysw.com

Mail: 1315 NW 185th Avenue #180
Beaverton OR 97006 USA

Check Infinity Softworks web site for telephone support numbers and times.

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The *powerOne*™ Personal calculator does not support system find functionality.

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