XEROX

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Xerox ViewPoint

VP Spreadsheet and
VP Office Accessories
Reference

7

Volume 7

XEROX

Xerox ViewPoint

VP Spreadsheet and
VP Office Accessories Reference

VP Spreadsheet

VP Office Accessories: Clock

                                    Calculator

                                    Personal Calendar

                                    Keyboard Accelerators

Changes are made periodically to this document. Changes, technical inaccuracies, and typographic errors will be corrected in subsequent versions.

This book was created on the Xerox 6085 Professional Computer System.

Table of contents

Part 2   VP Office Accessories

List of tables

Introduction

This volume is part of the *VP Series Reference Library*, which is the encyclopedia for ViewPoint software. This library provides the most complete source of information on ViewPoint and VP Series applications for your 6085 Professional Computer System or 8010 Information System.

Before you use this volume

Several separate volumes make up the *VP Series Reference Library*. Each volume provides information about a general category of applications, such as graphics, terminal emulation, or file conversion.

Before you refer to any VP Series reference application volume, you should become familiar with the following "core" documentation:

- *ViewPoint QuickStart Training.* Provides training and exercises for basic workstation operations as well as for creating, editing, printing, mailing, and filing documents.

- *General User Reference.* Describes the basic operations common to all ViewPoint and VP Series application software.

- *Document Editor Reference* volume 3. Provides complete information on creating and editing a document.

By mastering the ViewPoint and Document Editor basics, you will soon be able to use other

VP Series applications to perform important tasks quickly and confidently.

About this volume

This volume contains the following:

* Part 1   *VP Spreadsheet*
* Part 2   *VP Office Accessories*

How chapters are organized

Reference material is rarely read through from cover to cover. Instead, you use it to look up specific information from time to time, much as you would use an encyclopedia.

To help you locate information, the major topics of most chapters are organized as follows:

* A key concepts section describes the principal elements of the application or feature. The key graphic illustrated at the left marks the beginning of such sections.

* A description of property sheets, option sheets, and windows provides detailed information about the properties and options related to the application.
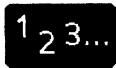
* A procedures section provides step-by-step information on how to use the application. The 1-2-3 graphic illustrated at the left marks the beginning of such sections.

Documentation conventions

The *VP Series Reference Library* uses the following conventions:

- Square brackets. Names of commands and property and option choices that you select with the mouse appear enclosed within brackets; for example, the [Close] command.

- Angle brackets. The names of workstation keys and alternate function keys are enclosed within angle brackets; for example, the <OPEN> key and the <PROP'S> key. This convention applies to alphabetic and numeric keys. It does not apply to words used to describe keys marked with arrow symbols, such as the tab key.

- Italics. Glossary words, VP application names, volume names, and the library name appear in *italics*.

- Bold. Names of properties, options, selections in the User Profile, information you must type, notes, and warnings appear in **bold**.

As often as possible, graphic images (such as pointer arrows) are printed in the text as they appear on the screen or on the keyboard.

Hardware and software requirements

The applications described in this volume run on the 6085 Professional Computer System and the 8010 Information System.

The following 2.0 software must be installed, enabled, and running on the workstation:

- *Xerox ViewPoint*

- *VP NetCom, VP RemoteCom,* or *VP Standalone*

- *VP Document Editor*

For *VP Spreadsheet,* you must also install, enable, and run the following:

- *VP Spreadsheet*

For *VP Office Accessories,* you must install, enable, and run the following applications:

- Clock
- Calculator
- Personal Calendar
- Keyboard Accelerators

Included with *VP Office Accessories* is the *VP Office Accessories Templates, Tools, and Transfers* software package. This package contains on-line templates, tools, and transfers that you can use on your workstation.

Related documentation

The following training materials are recommended reading. You should be familiar with their contents before using *VP Spreadsheet* and *VP Office Accessories* software.

- *VP Spreadsheet Training*
- *VP Office Accessories Training*

Information for VP CUSP Button programmers

If you are writing a CUSP program and want the program to refer to icons for the applications described in this volume, use the following as the icon types:

- Spreadsheet
- Calendar

CUSP currently cannot manipulate the icons for the Clock and Calculator applications.

Part 1

VP Spreadsheet

1.   Spreadsheet

The *VP Spreadsheet* software allows you to create electronic worksheets on the 6085 Professional Computer System and the 8010 Information System. Spreadsheet software lets you create and manipulate data for reports such as budgets, sales forecasts, and financial statements.

Key concepts of Spreadsheet

Spreadsheet has capabilities many spreadsheet packages currently offer. Using Spreadsheet in combination with the desktop capabilities of ViewPoint, however, enhances your ability to move data between spreadsheets and other documents.

For example, each spreadsheet appears as a separate spreadsheet icon. Opening the icon displays the Spreadsheet window and activates the Spreadsheet software. You can open several spreadsheets at once to compare or transfer data. By using ViewPoint's alternate language keyboards, you can enter spreadsheet labels in any of the supported languages.

Spreadsheet icon

Unlike other personal computing spreadsheet applications that list spreadsheets by file names, these spreadsheets appear as icons on the desktop (Figure 1-1). You can mail, print, or file spreadsheet icons just as you do any other workstation data icon.

Figure 1-1   **Spreadsheet icon**

Spreadsheet window

When you open a spreadsheet icon, the Spreadsheet window (Figure 1-2) appears. The window includes the familiar format of rows and columns and additional items in the header that let you manage the spreadsheet. You can open as many spreadsheet windows as you need.

Figure 1-2   **Spreadsheet window**
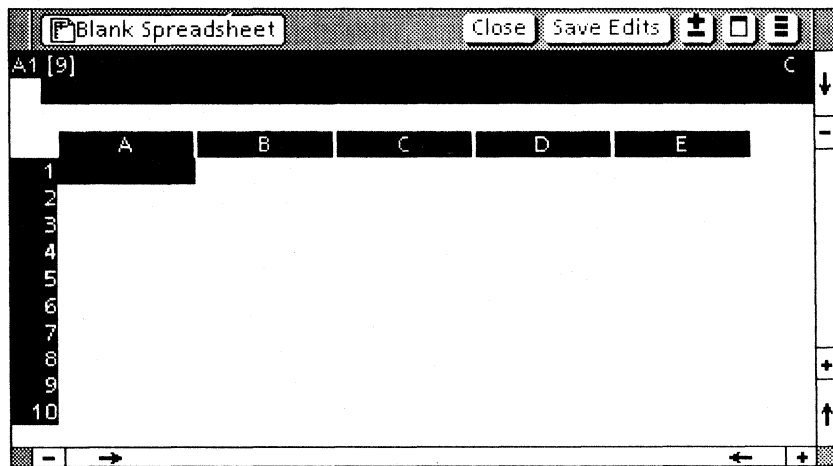
Spreadsheet terminology

You can place information at each point where a spreadsheet column intersects a row. These data points are called *cells*. A cell's address (or coordinates) is made up of the column letter followed by the row number. For example, A1 is the address of the first cell in a spreadsheet.

When you place the pointer on a cell and click the left mouse button, the pointer changes to a large cursor. The cursor highlights the cell that you selected. In Figure 1-2, the cell A1 is highlighted.

Once you have highlighted the cell, you can place information into that cell. You can use the cells for many purposes. Usually the information you place into a cell is in one of the following categories:

- Numerical data

- Textual information that can serve as labels or headings

- Formulas, which often refer to data in other cells, used to compute a new value. You can display either the formula or its result in the cell.

You can also give the spreadsheet any of several commands that may change the contents of the selected cell or the contents of many cells. These commands are often referred to as "slash commands," because you use the "/" character to signal that you want to use one of the commands.

For example, "/E" indicates that you want to edit the information in the current cell. "/C" means you want to clear the contents of all the cells in the spreadsheet. A later section, titled "Spreadsheet commands," discusses the commands that are available.

Spreadsheet soft keys

When you select inside the Spreadsheet window, the workstation automatically reprograms the top row function keys. Additionally, a set of Spreadsheet soft keys (sometimes called alternate function keys) displays on the lower part of the screen. The soft key labels show the functions that the soft keys, and their corresponding top row function keys, perform while you are working in the Spreadsheet window.

Spreadsheet alternate keyboard

One of the soft keys lets you select the Spreadsheet alternate keyboard. The keyboard includes function keys for Spreadsheet commands, as well as number keys and other characters often used in spreadsheet formulas.

Creating reports

You can use the [Make Table] command to easily transfer Spreadsheet data to a table. You can also print parts or all of a spreadsheet just as you would print a document.

Special characters recognized by Spreadsheet

Once you select a cell, the first character you type signals your intentions. For example, if you type a number, Spreadsheet treats the entry as a value. If you start with a letter, Spreadsheet recognizes the entry as a label.

You can use the following keys to be more specific about your intentions:

</ > Puts the spreadsheet in the command mode. The prompt line lists letters that represent commands available to you. For example, if you follow the "/" with an "E", the spreadsheet lets you edit the contents of the selected cell. A

succeeding section, titled "Spreadsheet commands," discusses the commands available to you.

< " >   Specifies a label entry. Use this method when you want to begin a label with a number. You can use a right or left double quote and do not need to put a closing quote at the end of the label.

< + >   Specifies a formula. Use this method when you want to start a formula with a non-numeric term such as the address of a cell. If your formula begins with a number, you do not need to begin with a +.

< @ >   Precedes all function names, whether the function is at the beginning of the cell or later in a formula.

< > >   Initiates the [Goto] command. You need to follow it with the coordinates of the cell you want the cursor to go to.

< ! >   Causes Spreadsheet to recalculate all formulas in the spreadsheet. This is useful when you have set the spreadsheet to manual calculations, and you want to see the effects of updating the data in some cells.

Note: If you have just entered a formula on the edit line and include an exclamation mark at the end, pressing the return key calculates that formula and replaces it with its value.

< . >   Indicates you want to specify a range of cell coordinates, rows, or columns.

Note: You enter a period after the first set of coordinates of a range when using the replicate command (/R) to copy a range of cells. However, the spreadsheet

puts an ellipsis (...), instead of a period, after the first coordinates on the edit line.

Cursor movement in the spreadsheet

Before you can work with the contents of an individual cell, you must place the cursor in that cell. Combining the Spreadsheet software with the normal desktop capabilities gives you several convenient ways to move the cursor from cell to cell.

You can use any of the following methods to place the cursor in a cell.

• Select the cell with the mouse.

• Use the arrow keys in the Spreadsheet Soft Keys window to move the cursor, from one cell to the next cell, in the direction indicated by the arrow.

• Use <NEXT> to move the cursor to an adjacent cell. To use this method, you must already have established the direction.

  For example, if you fill in one cell and use the down arrow soft key to move to the cell below, you have established down as the direction you are using to fill in cells. Then, if you press <NEXT>, the cursor moves down to the next cell.

  You can also establish direction by moving the cursor from one cell to another using the mouse. <NEXT> will then move the cursor in the same direction once you are finished with the current cell.

• Use the [Goto] command, which moves the cursor to the cell you specify. This command is particularly helpful on large spreadsheets where you need to move the cursor to a cell that is not visible on the desktop.

When you are entering data in a single cell, you normally complete the entry by pressing the return key. When you move to another cell using the mouse, the arrow keys, or the <NEXT> key, the cursor movement also completes the entry just as if you had pressed return before moving the cursor. This lets you move easily from cell to cell when you have numerous entries to make.

Scrolling the spreadsheet

When you move the cursor to a cell that is not visible, the spreadsheet scrolls or redisplays to show the new location.

You can use the < ← >, < ↑ >, < ↓ >, and < → > Spreadsheet soft keys to scroll a spreadsheet to a nearby location. Once you have moved the cursor to the boundary of the Spreadsheet window, repeating the same arrow key scrolls the spreadsheet to reveal the next row or column. You can continue column-by-column or row-by-row until you reach the actual spreadsheet boundaries.

File conversion

Optional file conversion applications are available to convert your spreadsheet data to other formats such as Lotus 1-2-3, Data Interchange Format (DIF), and VisiCalc. These conversion applications also let you import files from other spreadsheet programs.

Refer to the *File Conversions Reference* volume and the *VP PC Emulation and MS-DOS User Guide* for details on how to convert spreadsheet data between programs.

Recalculation of Spreadsheet formulas

One of the benefits of using spreadsheets is the ability to easily update all calculations after you change data in some cells. Once you use formulas that depend upon values in other cells,

however, you should be aware of when Spreadsheet recalculates the formulas and what order it uses.

You can use four commands (/GRM, /GRA, /GOR, /GOC) to change a spreadsheet's recalculation priority and order.

Note: Spreadsheet commands are discussed in greater detail in the following section titled "Commands, operators, and functions."

When formulas are recalculated

You can choose to have the spreadsheet recalculated:

- Automatically whenever a new value is added to the spreadsheet

- Only when you indicate that you want the formulas recalculated

Automatic recalculation works well for small spreadsheets. When you have a large spreadsheet that includes many formulas, you normally will not want the entire spreadsheet recalculated as you enter each new piece of data.

When you open a spreadsheet, it is set to recalculate automatically. You can use the /GRM command to switch the spreadsheet to manual recalculation. In manual recalculation, the spreadsheet recalculates only when you select any cell and press < ! >.

Note: Whenever you use manual recalculation, be sure you recalculate the spreadsheet after entering new data and before you extract data for reports or printouts.

You can use the /GRA command to switch the spreadsheet back to automatic recalculation.

Recalculation order

When a spreadsheet recalculates, it starts in the upper left corner at cell A1 and finishes at the lower right corner. You can specify whether it checks all cells row-by-row or column-by-column. Either way, however, a cell is always recalculated before all cells that are below <u>and</u> to the right of it.

The default recalculation order is column-by-column. In that case, each cell in column A is recalculated before every cell in column B and the rest of the columns to the right.

You can use the /GOR command to change the recalculation order to row-by-row. When you change to row-by-row, each cell is recalculated before every cell below it.

You can use the /GOC command to change the recalculation order back to column-by-column. The letter (C or R) at the right end of the status line indicates whether the spreadsheet is set to column-by-column or row-by-row.

You need to be aware of the recalculation order whenever you use formulas that refer other cells that also contain formulas. If your formulas always refer to cells that are above and to the left, your formulas will always have the most current values.

You can encounter problems when your formula refers to cells that come after the formula's cell in the recalculation order. In that case, the formula is recalculated before updates are included in the values of the referenced cells.

If that happens, you can force a second recalculation by selecting a cell and pressing < ! >. The second recalculation of your formula uses the values that were updated in the first recalculation, so the formula's result is correct after the second recalculation.

Commands, operators, and functions

You can use commands to edit spreadsheets and to customize the formats of the information in the spreadsheet's cells. You use operators and functions to calculate values in cells. You can place a function by itself in a cell or use operators to include functions in formulas with other data.

Spreadsheet commands

Spreadsheet commands fall into three general categories. The editing commands help you change the contents of individual cells or groups of cells. The format commands let you customize the formats of individual cells. The global commands let you change formats for large sections of the spreadsheet.

Editing commands

/B   Erases the contents of the selected cell.

/C   Clears (erases) the contents of the entire spreadsheet.

/DC   Deletes the column that includes the selected cell. After deletion, formulas in remaining cells are adjusted accordingly, if possible.

/DR   Deletes the row that includes the selected cell. After deletion, formulas in remaining cells are adjusted accordingly, if possible.

/E   Places the contents of the selected cell on the entry line for editing.

/IC   Inserts a blank column before the selected cell.

/IR   Inserts a blank row above the selected cell.

/M   Moves the row or column containing the selected cell to a new location.

/R   Replicates (copies) the contents of a cell or range of cells to another range of cells.

/TH   Locks in place the row containing the cursor and all rows above it. Useful for keeping column labels displayed when you are working on a large spreadsheet.

/TV   Locks in place the column containing the cursor and all columns to the left. Useful for keeping row labels displayed when you are working on a large spreadsheet.

/TB   Locks both rows and columns so they are always displayed when the spreadsheet is scrolled.

/TN   Unlocks rows and columns previously locked.

/V   Displays the current version of the software and the copyright notice.

/WH   Splits the spreadsheet into two horizontal windows with the selected cell in the top row of the new section.

/WV   Splits the spreadsheet into two vertical windows with the selected cell in the left column of the new section.

/W1   Recombines a split spreadsheet into one window.

/WS   Enables you to scroll both parts of the split spreadsheet simultaneously.

/WU   Enables you to scroll the parts of a split spreadsheet independently.

/-   Fills the selected cell by repeating whatever you place on the entry line as the re-

repeating label. For example, if you enter an asterisk (*), that character repeats to fill the cell with asterisks.

Note: All the repeated characters may not print when you create a table and send the document to the printer.

Formats and formatting commands

When you open a blank spreadsheet, each cell is set to present information in a common format called the general format. You can use format commands (/F commands) to assign specific formats to individual cells. You can also use global commands (/G commands) to change the format of all cells that have not been assigned specific formats.

Specific formats you set for individual cells have priority. For example, if you assign the right aligned format to a cell, the contents of the cell will be right aligned no matter what the global or general format calls for. The global or general format would still set other characteristics such as column width.

When a characteristic (such as a column width) of a cell is not set by a specific format, the format will be as called for by a global command. If you have not set that characteristic with a global command, the characteristic will match the general format.

General format
The general format displays numbers with the greatest precision possible. Labels are left aligned and numbers are right aligned. Column width is 9 units (13 units on extended language workstations). The number of characters that fit into a column depends upon the width of each character.

Default format
> The default format determines the spreadsheet's appearance whenever you open the sheet. The format matches the general format unless you have made changes using format or global commands. The default format matches the format set by the last global command. Formats assigned to individual cells determine the appearance of those cells.

Integer format
> Formats the selected cell (or the spreadsheet) to display numbers rounded to the nearest whole number. The /FI command, listed in the following section, sets the integer format for a single cell. The /GFI command sets the integer format for all cells of the spreadsheet.

Money format
> Formats the selected cell (or spreadsheet) to display numbers rounded to two decimal places. The /F$ command sets the money format for the selected cell. The /GF$ command sets the money format for all cells of the spreadsheet.

Graph format
> Formats the selected cell to display asterisks to represent the magnitude of values. The /F* command, listed in the following section, sets the graph format. The /GF* command sets the graph format for all cells of the spreadsheet.

Format commands for individual cells

/FC   Lets you to change the width of the column containing the selected cell.

/FD   Deletes the cell's individual formatting, and changes the cell's format to the current global format. If you have not set any global formats, the cell's format becomes the default format.

/FG Sets the format to the general format. Displays numbers right aligned with the greatest precision possible. Displays labels left aligned.

/FI Sets the integer format, displaying numbers rounded to the nearest whole number.

/FL Sets the cell format to left aligned.

/FR Sets the cell format to right aligned.

/F$ Sets the money format, displaying the number with two decimal places.

   Note: The money format is the only one you can use to define decimal places.

/F* Sets the graph format. Truncates the cell's value to an integer and then displays that number of asterisks in the cell (if they fit).

   When several values in the same column have the graph format, the appearance is a visual display similar to a horizontal bar chart. As numbers get larger, however, you will need a wider column or need to divide all by a common factor to keep the display meaningful.

Global commands

Global commands change formats throughout a spreadsheet or throughout the part of a split spreadsheet you are currently using.

Note: The formats you set for particular cells with a /F command take priority over corresponding global commands. For example, if you set the column width to 6 for column A, that column is not changed if you set the global column width to 12.

The letter **v** in the command represents the new value you want. For example, if **v** were 12 in the first command, the new column width would be 12.

/GC**v**   Changes to **v** the width of each column not previously set with a /FC command.

/GFD   Changes all unformatted entries back to the default format.

/GFG   Sets the display on all unformatted cells to maximum precision.

/GFI   Sets the global format to integer.

/GFL   Sets the global format to left aligned.

/GFR   Sets the global format to right aligned.

/GF$ Sets the global format to the money format (two decimal places).

Note: If you set the alignment using /GFL or /GFR after setting the money format, the money format is not retained.

/GF*   Sets the global format to graph.

/GOC   Sets the recalculation order to columns.

/GOR   Sets the recalculation order to rows.

/GRA   Sets the spreadsheet to automatic recalculation after you edit each cell.

/GRM   Sets manual recalculation. This means that the spreadsheet's formulas update only when you select a cell and press < ! >.

Spreadsheet operators and functions

A primary strength of any spreadsheet is its ability to apply formulas to its numerical data. Table 1-1 summarizes the operations and functions you can use with your spreadsheets.

Table 1-1   **Spreadsheet categories and commands**

Operations/ functions	Description
Arithmetic	Addition, subtraction, multiplication, division, square roots, powers, exponents, absolute value, integers, natural logarithm, base 10 logarithm
Trigonometric	Sine, cosine, tangent, arc sine, arc cosine, arc tangent
Logical functions	AND, OR, NOT, IF
Logical operators	Equal to, not equal to, less than, less than or equal to, greater than, greater than or equal to
Miscellaneous	Pi, lookup, count number of entries, sum, net present value, maximum value, average, minimum value, choose from a list of values

Spreadsheet operators

The arithmetic operators are available to you from several places. They all appear on the Spreadsheet alternate keyboard. All but the exponentiation operator $<\wedge>$ also appear on the:

- Keyboard

- 6085 Professional Computer System's Ten-Key Pad

- Spreadsheet on-screen Ten-Key Pad on the 6085 Professional Computer System

- Calculator on-screen Ten-Key Pad on the 8010 Information System

The logical operators are available using normal keys on the keyboard.

Arithmetic operators

You can use any of these arithmetic operators in the formulas you place in spreadsheet cells.

+	Add
-	Subtract
*	Multiply
/ or ÷	Divide
$\wedge$	Exponentiation

Logical operators

=	Equal to
< >	Not equal to
< =	Less than or equal to
>	Greater than
> =	Greater than or equal to

Spreadsheet functions

Spreadsheet includes a number of functions that simplify formula writing. They all begin with @. Most functions require an argument or list of arguments, separated by commas.

Place arguments in parentheses immediately after the function name. An argument(s) may be a value, expression, or range. In the Spreadsheet functions that follow, the arguments are represented by:

v   A value (number), a cell location (or range when appropriate), or, in general, another formula

l   Any logical value

range   A series of cells, rows, or columns. The format is cell address, period, cell address, as in A4.A19.

list   A list of values separated by commas. In some cases, you may enter a **range** of cells, rows, or columns, and the program uses values in those cells.

Arithmetic functions

@ABS (**v**)	Returns the absolute value of **v**.
@EXP (**v**)	Returns e (2.71828...) raised to the power of **v**.
@INT (**v**)	Returns the integer part of **v**; for example, @INT(4.67) returns 4.
@LN (**v**)	Returns the natural logarithm of **v**.
@LOG10 (**v**)	Returns the base 10 logarithm of **v**.
@SQRT (**v**)	Returns the square root of **v**.

Trigonometric functions

The trigonometric functions use <u>radians</u> in their calculations. The angle **v** that you enter in the first three functions must be in radians. Since 360 degrees equal 2π radians, one degree equals approximately .01745329 radians. So, if you have an angle in degrees, multiply it by .01745329 radians (or 2π/360 if you need greater accuracy) before entering the angle as **v**.

@SIN(**v**)   Computes the sine of **v**.

@COS(**v**)   Computes the cosine of **v**.

@TAN(**v**)   Computes the tangent of **v**.

The following functions produce answers in radians. One radian equals approximately 57.29577951 degrees. So, multiply your answer by 57.29577951 (or 180/π if you need greater accuracy) when you need the answer in degrees.

@ASIN(**v**)   Computes the angle whose sine is **v**.

@ACOS(**v**)   Computes the angle whose cosine is **v**.

@ATAN(**v**)   Computes the angle whose tangent is **v**.

Logical functions

@AND(**list**)   False if any of the logical values in **list** are false; otherwise, true.

@IF(**l**,**v1**,**v2**)   IF **l** THEN **v1** ELSE **v2**.

@ISERROR(**v**)   True if **v** is ERROR; otherwise, false.

@ISNA(**v**)   True if **v** is NA; otherwise, false.

@NOT(l)   True if the logical value is false;
                 if the logical value is false, true
                 displays.

@OR(list)   True if any of the logical values
                 in list are true; otherwise, false.

Miscellaneous functions

@ERROR   Displays ERROR in selected cell
                 and any cell with a formula that
                 refers to selected cell.

@NA   Displays NA in the selected cell
                 and any cell with a formula that
                 refers to that cell.

@TRUE   Displays the value TRUE.

@FALSE   Displays the value FALSE.

@Pi   3.141592653898

@NPV(**dr,**   Net Present Value of future cash
range)   flows. Cash flow locations are
                 specified in **range** and the
                 discount rate in **dr.**

@COUNT(**list**) Counts number of entries in **list.**

@MAX(**list**)   Finds maximum value in **list.**

@MIN(**list**)   Finds minimum value in **list.**

@SUM(**list**)   Adds all numbers in **list.**

@AVERAGE(**list**) Finds average value of entries in
                 list.

@CHOOSE   Chooses a value from a list. The
(**v,list**)   letter **v** is the position in the list
                 of the item to be chosen.

@LOOKUP   Looks up **v** in the **range.**
(**v,range**)

Windows, property sheets, and option sheets

The Spreadsheet window is the primary window of the Spreadsheet application. In addition, option sheets let you make a table of a spreadsheet or print all or part of a spreadsheet. This section also discusses the Spreadsheet Soft Keys window and the Spreadsheet alternate keyboard that you can display on the screen.

Spreadsheet properties sheet

You use the Spreadsheet properties sheet (Figure 1-3) to assign a name to the Spreadsheet icon.

You can display the Spreadsheet properties sheet by selecting a Spreadsheet icon and pressing < PROP'S >. The commands in the header of the Spreadsheet properties sheet work the same as in other property sheets.

Figure 1-3   **Spreadsheet properties sheet**
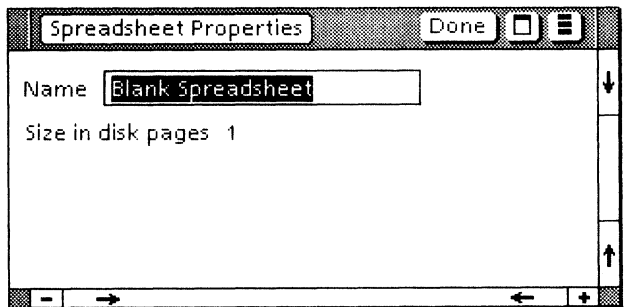
Name
Displays the name of the spreadsheet. You can assign a new name by deleting the old name and typing a new one. Try to pick a name that will remind you of the contents of the spreadsheet.

Size in Disk Pages
Displays the spreadsheet size in disk pages.

Spreadsheet window

A Spreadsheet window, such as the example in Figure 1-4, appears when you select a Spreadsheet icon and press <OPEN>. Most of the window is space that is formatted for columns and rows of information and data that you will enter as you develop the spreadsheet.

Your spreadsheets can have up to 255 rows and up to 63 columns in each row. The column labels are letters across the top. Row labels are numbers down the left side of the spreadsheet. Those labels appear only on the screen display and not on printouts.

Figure 1-4   **Spreadsheet window showing the status, prompt, and entry lines**
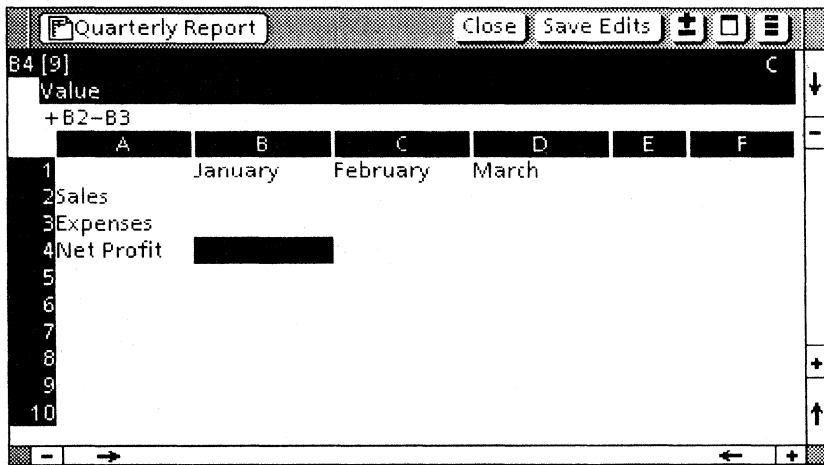
The intersection of a row and column is called a cell. A spreadsheet can have up to 16,065 cells (255 rows times 63 columns). You can place a number, a formula, or text in each cell.

The cell's column letter and row number (for example, A3 or D47) are referred to as the cell's address or set of coordinates.

The Spreadsheet window includes a status line, prompt line, and entry line, which are visible at all times in an open spreadsheet.

Status line

The status line displays the following information about the cell that contains the cursor:

- The address of the cell

- A (V), (L), or a (/-) indicates the type of information in the cell whenever the cursor's cell is not blank. (V) indicates the contents of the cell is a value; (L) indicates a label; and (/-) indicates a repeating label.

- A number in brackets, which is the width of the cell's column

- The contents of the cell or the formula or function that produced the contents of the cell. This item is blank when the cell is blank.

Prompt line

The prompt line is located right below the status line. The prompt line displays prompts or information to help you complete the command sequences.

Entry line

The entry line is the line directly below the prompt line. When you type in information for a selected cell, the information appears on the entry line until you press the return key. Then

the information disappears from the entry line and is applied to the cell.

Display options

You have several options in the way you display the Spreadsheet window. You can:

- Choose a full-screen display that lets your spreadsheet cover all the screen below the desktop header.

- Split the Spreadsheet window to view or work on two widely separated sections of a large spreadsheet.

  - Split the window horizontally (Figure 1-5) to display groups of rows from two different parts of the spreadsheet.

  - Split the window vertically to display groups of columns from two different parts of the spreadsheet.

- Hold specified rows (or columns) in place while you scroll other rows (or columns) of data.

Window commands

[Close]
Closes the window and returns the spreadsheet to icon form. Saves all changes made to the spreadsheet since you opened it or since the last time you selected [Save Edits]. Saves the cursor location so that you can return to the same area the next time you open the spreadsheet.

Note: If the cursor location is the only thing that has changed since the last time you selected [Save Edits], the new location is not saved. The spreadsheet will open to the cursor's position at the time you selected [Save Edits].

Figure 1-5   **Split spreadsheet window
showing formulas**

[Save Edits]
Saves the current contents of the spreadsheet and the cursor location. Prevents loss of updates in case of power failure or other problems before you close the spreadsheet.

[Full Screen]
This command appears in the spreadsheet's window management auxiliary menu. When you select [Full Screen], the Spreadsheet window expands to cover all the screen below the desktop header. This allows you to view as many cells as possible. The command also toggles to [Undo Full Screen] to allow you to return the Spreadsheet window to its previous size.

Spreadsheet auxiliary menu

The header of the Spreadsheet window includes the spreadsheet auxiliary menu, which is represented by the symbol [±]. Select the menu to display additional commands.

[Make Print Format Document]
Displays the Make Print Format Document option sheet. The sheet lets you create an Interpress master of all or part of the contents of the spreadsheet.

[Make Table]
Displays the Make Table option sheet, which you can use to create a table from the contents of the spreadsheet.

[Show Formulas]
Selecting [Show Formulas] redisplays the spreadsheet. The new version displays formulas in their cells rather than displaying the values that result from applying the formulas. When [Show Formulas] is selected, [Don't Show Formulas] appears in the menu.

Note: The column widths remain the same when formulas display. Therefore, if a formula is longer than the current column width, not all of the formula is visible in the cell. However, the complete formula for a particular cell always displays on the entry line when you select the cell.

[Don't Show Formulas]
Selecting [Don't Show Formulas] redisplays the spreadsheet with the values that result from applying formulas instead of showing the actual formulas in the cells. When [Don't Show Formulas] is selected, [Show Formulas] appears in the menu.

Make Print Format Document option sheet

The Make Print Format Document option sheet (Figure 1-6) enables you to place a copy of all, or part of, the contents of a spreadsheet into an Interpress master. You can display the Make Print Format Document option sheet by selecting [Make Print Format Document] in the spreadsheet auxiliary menu.

Figure 1-6 Make Print Format Document option sheet
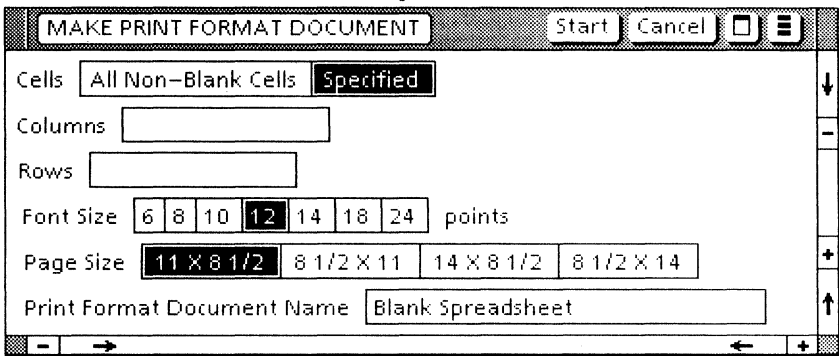
Window commands

[Start]
Creates an Interpress master containing the specified rows and columns of the spreadsheet.

[Cancel]
Closes the option sheet without applying any changes to the properties.

Make Print Format Document options

Cells
Specifies which cells will be included in the Interpress master. If you select [All Non-Blank Cells], the Interpress master will include

the non-blank portion of the spreadsheet. If [Specified] is selected, only the rows and columns you specify are included.

Columns
Specifies the columns to be included in the Interpress master. **Columns** appears only if you select [Specified].

Enter your choices as column letters separated by either periods or commas. A period indicates a range of columns. A comma just serves to separate the individual column letters you list. You can repeat column letters if you want information, such as row labels, repeated at different places in the printout.

For example, a choice of A,D.K,A would print column A, columns D through K, and repeat column A.

Note: If you select [Make Print Format Document] again from the same spreadsheet's auxiliary menu, your **Columns** (and **Rows**) selections will still appear on the option sheet. However, the periods have been replaced by an underline character with a box around it. The workstation recognizes that character as the range character. You can use it or the period to specify a range for your next print format document.

Rows
Specifies the rows to be included in the Interpress master. **Rows** appears only if you select [Specified].

Enter your choices for row numbers using commas and periods, the same as with columns. For example, a choice of 2,5.12, 15,2 would include row 2, rows 5 through 12, row 15, and repeat row 2.

Font Size
Specifies the font size you want used when you print the Interpress master.

Page Size
Specifies the page size you want used when you print the Interpress master.

Print Format Document Name
Specifies the name of the Interpress master.

Make Table option sheet

The [Make Table] command in the spreadsheet auxiliary menu enables you to copy specified rows and columns into a table in a new document. Once you have the table, you can use it as you would use any other table. For example, you could use the table as an input to the *VP Data-Driven Graphics* application to produce a bar, line, or pie chart.

You can display the Make Table option sheet (Figure 1-7) by selecting [Make Table] in the spreadsheet auxiliary menu.

Figure 1-7 **Make Table option sheet**
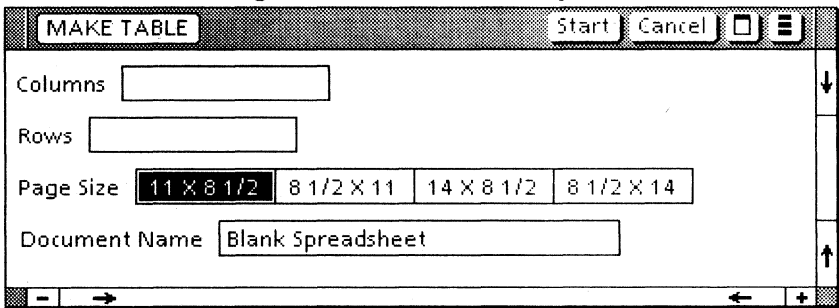
Window commands

[Start]
Creates a table containing the specified spreadsheet rows and columns.

[Cancel]
Closes the option sheet without applying any changes or making a table.

Make Table options

Columns
Specifies the columns to be included in the table. Lists the columns by letter, separated by commas, and/or as a range (first and last column letter separated by a period), as discussed in the previous subsection titled "Make Print Format Document options."

Rows
Specifies the rows to be included in the table. Lists the rows by number, separated by commas, and/or as a range (first and last row number separated by a period).

Page Size
Specifies the page size you want used in the page layout for the new document that will contain the table.

Document Name
Specifies the name of the document produced to include the new table.

Spreadsheet Soft Keys window

The Spreadsheet Soft Keys window appears when you select inside the Spreadsheet window. Figure 1-8 shows the keys as they display on the 6085 Professional Computer System. The 8010 Information System displays the same keys without the two blank keys. When you select outside the spreadsheet, the soft keys disappear.

Figure 1-8   **Spreadsheet Soft Keys window**

| KBD | Show | Edit | Goto | ← | ↑ | ↓ | → | | |

< KBD >

Activates the Spreadsheet alternate keyboard.

You can use any of three actions to return to the previous previous keyboard:

- Select outside of the spreadsheet.

- Hold down < SHIFT > and select the < KBD > soft key.

- Hold down < SHIFT > and press the corresponding top row function key.

< Show >

Shows the Keyboard window on the screen. The Keyboard window shows the keyboard that is currently active. If you also select < KBD >, the Spreadsheet alternate keyboard displays.

< Edit >

Lets you edit the formula or the contents of the selected cell.

< Goto >

Enables you to move quickly to another part of the spreadsheet by entering the cell address, such as A4 or K8, and then pressing the return key.

< ← >

Moves the cursor one cell to the left.

< → >

Moves the cursor one cell to the right.

< ↓ >

Moves the cursor downward one cell.

< ↑ >

Moves the cursor upward one cell.

Spreadsheet Alternate Keyboard window

Using the Spreadsheet Alternate Keyboard window (Figure 1-9) can speed up the way you enter formulas, data, and some functions into spreadsheet cells. Select < KBD > in the Spreadsheet Soft Keys window (or press the corresponding top row function key) to activate the Spreadsheet Alternate Keyboard window. Select < Show > to display the keyboard on the screen.

Figure 1-9 **Spreadsheet Alternate Keyboard window**
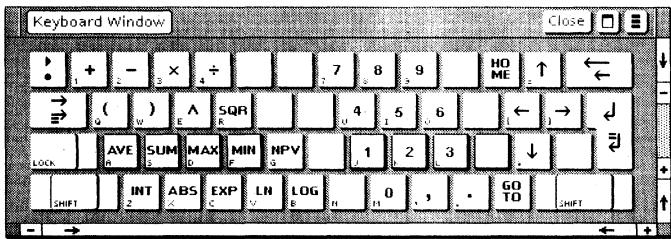
Once you select < KBD >, the Spreadsheet alternate keyboard remains in effect until you select outside of the spreadsheet or press < SHIFT > and select < KBD >. Closing the keyboard window alone does not deactivate the Spreadsheet alternate keyboard.

Note: If you need to enter a column letter after you have activated the Spreadsheet alternate keyboard, you must restore the standard keyboard, since the Spreadsheet alternate keyboard does not include letters.

The keyboard includes:

• Arrow keys for moving the cursor

• Arithmetic operators

- Keys for punctuation marks commonly used in spreadsheets

- Number keys organized in a keypad layout

- Keys that represent commands or commonly used functions

All the keys are self-explanatory except the following:

$<\wedge>$ Represents exponentiation. If you put the formula 4 $\wedge$ 6 on the entry line, the cell value will be 4 raised to the 6th power.

< HOME > Moves the cursor to cell A1.

< GOTO > Activates the [Goto] command. Follow that with an address. However, you must deactivate the Spreadsheet alternate keyboard to type the column letter. Therefore, the < Goto > key on the Spreadsheet Soft Keys is more convenient than activating the Spreadsheet alternate keyboard just to use this key.

< SQR >   This key, and the ten other function keys, help you put commonly used functions on the entry line.

In this example, selecting < SQR > (or pressing the corresponding keyboard key) places "@SQRT(" on the entry line. You would then complete the function by including the number you want the square root of and then closing the parentheses. Other function keys work similarly.

Printing option sheet (Spreadsheet version)

When you copy a spreadsheet icon to a printer icon, a modified version of the Printing option sheet appears. Spreadsheet options replace the

options that let you specify whether or not to repaginate before printing and specify which pages to print.

Figure 1-10 illustrates a typical Printing option sheet for a spreadsheet. Some options may be different depending on the printer configuration that supports your workstation.

The *Workstation Administration and System Resources Reference* volume explains the routine options that appear on the option sheet. The following are the options that appear only when you copy a spreadsheet icon to a printer icon.

Figure 1-10 Printing option sheet (Spreadsheet version)

Cells

Specifies which cells will be included in the printout. If you select [All Non-Blank Cells], the printout will include the non-blank portion of the spreadsheet. If you select [Specified], the printout includes only the rows and columns you specify.

Columns

Specifies the columns to be included in the table. List the columns by letter. Separate by commas and/or as a range (first and last column letter separated by a period), as discussed in the previous subsection titled "Make Print Format Document options." **Columns** appears only if you select [Specified].

Rows

Specifies the rows to be included in the printout. List the rows by number. Separate by commas, and/or as a range (first and last row number separated by a period.) **Rows** appears only if you select [Specified].

Font Size

Specifies the font size you want used in the printout.

Page Size

Specifies whether the spreadsheet will be printed with portrait or landscape orientation and the page size you want.

Note: You should ensure that the page size you pick is compatible with the **Paper Size** options available for the printer.

Print Format Document Name

Specifies the name of the printed document.

Procedures for using the spreadsheet

Before you can use the Spreadsheet software, you must copy one or more blank spreadsheet icons to your desktop. The icon is in the Basic Icons divider in the Workstation divider of the directory.

Use the Spreadsheet properties sheet to assign a unique name to each spreadsheet icon.

Procedures in this section assume that you have opened a spreadsheet on your desktop and have displayed the Spreadsheet alternate keyboard using the procedure that follows.

Displaying the Spreadsheet alternate keyboard

1. Select into an open spreadsheet to display the Spreadsheet Soft Keys window.

2. Select the < Show > and < KBD > soft keys, or press the corresponding top row function keys.

Entering information into a spreadsheet

You can enter text, numbers, or formulas that will produce a numerical result into any cell in the spreadsheet.

If you make a mistake, press < STOP > if you want to delete the entire entry and start over. You can also do normal ViewPoint editing on the entry line prior to step 3 in the following procedure. Once you enter the information into the cell, you cannot change it without using one of the editing procedures.

When you enter formulas, you have a choice of displaying the formulas or the results of the formulas in the corresponding cells. Make your choice by choosing [Show Formulas] or [Don't

Show Formulas] in the spreadsheet auxiliary menu. When a formula is too long to appear within the cell's width, the cell displays only the characters that fit. The complete formula appears in the status line anytime you select the cell.

Note: Formulas can include the addresses of other cells to use their values in the computation. Do not let your formulas refer to cells that contain labels instead of numbers or other formulas. If you do, the formula will consider that cell to have a value of zero since the formula cannot process text.

1. Select into a cell of an open spreadsheet.

2. Type the text, numerical data, or formula.

3. Press the return key if you are entering data in only one cell.

   To enter information into an adjacent or a nearby cell, you can use the mouse or the arrow soft keys instead of the return key.

4. Select a new cell with the mouse, or select an arrow key in the Spreadsheet Soft Keys window (or press the corresponding top row function key) to enter the current information and to move the cursor to an adjacent cell.

5. Repeat steps 2 and 4 to enter data into additional cells.

   Note: Once you have established the direction of cursor movement, you can use < NEXT > to complete the entry and move the cursor to the next cell in the last direction of movement.

6. Periodically select [Save Edits] in the spreadsheet's header to update the contents of the spreadsheet.

7. Select [Close] when you are finished with the spreadsheet.

Editing the spreadsheet

You can edit your spreadsheets in several different ways. If you want to replace the contents, just select the cell and enter the new contents as if the cell were blank.

Several of the commands also modify one or more cells. You can use the:

- /E command (or the <Edit> Spreadsheet soft key) to edit information in the selected cell

- /B command to blank the contents of the selected cell

- /C command to clear the contents of all the cells in a spreadsheet

- /M command to move whole columns or rows

- /DC or /DR commands to delete whole columns or rows

- /IC or /IR commands to insert blank columns or rows

- /R command to replicate (copy) information from a cell, or range of cells, from one area to another. This command is particularly useful for copying complex formulas.

Note: Cells are not protected. You can delete data with the /B, /C, /DC, /DR, or /E commands or by typing a new entry for the cell.

Replacing the contents of a cell

1. Select the cell you want to edit.
2. Type the new information.
3. Press the return key.

Editing the contents of a cell

1. Select the cell you want to edit.

2. Type /e or select the < Edit > soft key.

    The cell's contents, or formula, appears on the entry line. The prompt line displays "[Edit]: Value or [Edit]: Label."

3. Edit characters on the entry line just as you would edit regular text.

4. Press the return key.

Erasing spreadsheet contents

You can easily erase the contents of a single cell or clear the contents of the entire spreadsheet.

To delete data in a single cell:

1. Select the cell that has the contents you want to erase.

2. Type /b and press the return key. This erases the contents of the cell.

To clear the entire contents of a spreadsheet:

1. Select a cell.

2. Type /c

3. Type y to confirm that you want to erase the entire spreadsheet contents. The spreadsheet clears automatically when you type the y.

Moving columns or rows

1. Select a cell within the row or column you wish to move.

2. Type /m

The prompt line displays "Move: From...To." The entry line displays the cell's address followed by an ellipsis (...).

3. Enter the destination address.

    You can type the address or select the new cell with the mouse. Choosing a cell in the same row moves the column. Choosing a cell in the same column moves the row.

    When moving a column left (or a row up), select a cell that is in the destination column (or row).

    Note: When moving a column right (or a row down), select a cell that is just beyond the actual destination you want. This takes into account that the columns (or rows) in between have to move back to take the place of the column (or row) you are going to move.

4. Press the return key.

    All computation rules are automatically adjusted when a column or row is moved.

Deleting columns or rows

1. Select a cell within the row or column you wish to delete.

2. Type **/dc** to delete the column or **/dr** to delete the row.

3. Press the return key.

When you delete a column, all information to the right of that column moves left one cell. When you delete a row, all information below the row moves up one cell.

All computation rules are automatically adjusted when a column or row is deleted.

Inserting columns or rows

1. Select a cell within the row or column at the location at which the blank row or column should appear.

2. Type /**i**

3. Type **r** or **c**

    If you type **r** a blank row replaces the row that included the cursor. The original row, and all rows below it, move down one to make a place for the new blank row.

    If you type **c** a blank column replaces the column that included the cursor. The original column, and all columns to its right, move one column to the right to make a place for the new blank column.

Replicating cells or ranges of cells

The replicate command, /R, is useful when you need the same information repeated in other cells of a spreadsheet. You can replicate a single cell to one or more cells. You can replicate ranges of cells one or more times.

Note: In this procedure, you can use the mouse to designate the cells that represent the end of the source range and each end of the target range. When those cells are visible, using the mouse may be easier than typing the address.

To use the replicate command, you must provide up to three pieces of information:

*   The source range, which is the range of cells you want copied

*   The target range, which is the range of the cells into which you want to copy the data included in the source cell(s)

• Whether cell addresses are absolute or relative in any formula being copied from one cell to another

1. Select a cell you want to replicate or one that is at the beginning of the range of cells you want to replicate.

2. Type **/r**.

   The cell's address and three periods appear on the entry line.

3. Enter the address that completes the range if you want to replicate a range of cells. Skip to step 4 if you want only one cell in the range.

   Note: If you are copying formulas that include references to addresses of other cells, you should copy only one cell at a time.

4. Press the return key.

5. Enter the coordinates of the first cell that is to receive a copy of the information in the first cell of the source range.

6. Enter a period.

   Following the first cell coordinates, an ellipsis replaces the period on the entry line. This indicates that you have established the first address, and you now need to complete the target range by specifying the second address.

7. Enter the coordinates of the last cell of the target range.

8. Press the return key.

   This completes the procedure unless the source cell contained a formula that included references to the coordinates of other cells. If so, the prompt line asks you to specify whether you want each set of referenced coordinates transferred without change, or

transferred as new coordinates relative to the location of the target cell.

9. Type **n** (for no change) or **r** (to update coordinates relative to the target cell's location).

Making a table from spreadsheet data

1. Select the [Make Table] option in the spreadsheet auxiliary menu.

2. Specify appropriate options on the Make Table option sheet.

3. Select [Start].

Printing spreadsheet data

You can use either of two methods to print all or part of a spreadsheet.

Creating an Interpress format document

1. Select the [Make Print Format Document] option in the spreadsheet auxiliary menu.

2. Specify appropriate options on the Make Print Format Document option sheet.

3. Select [Start].

   This produces in Interpress master icon on your desktop. Do step 4 when you want to print the document.

4. Copy the Interpress master icon to an icon for a Xerox network printer.

Printing a spreadsheet

1. Copy the Spreadsheet icon to a printer icon.

2. Specify on the Printing option sheet the appropriate options that indicate the output

format and the parts of the spreadsheet you want to print.

3. Select [Start].

Part 2

VP Office Accessories

2.   Clock

The clock is a 6085 and 8010 workstation feature
that provides a constantly updated view of the
current time anywhere around the world. With
the Clock application, you can:

*   Display the clock in an analog or digital
    format.

*   Show hours, minutes, and seconds on the
    clock.

*   Set an a.m. or p.m. indicator on the clock.

*   Specify a time zone for the clock.

*   Set an alarm on the clock.

*   Provide the clock with a unique label.

*   Copy multiple clocks to the desktop, and set
    different properties for each clock.

The Clock application is part of the *VP Office
Accessories* software package. The Office
Accessories software package is a separate
application that builds on ViewPoint software.

Key concepts of the clock

When the Clock application is running in the application loader, the Clock icon appears in the Office Accessories divider in the directory.

When you copy the Clock icon to the desktop, the clock is automatically activated. The current time is displayed and continually updated by the workstation. The current time is taken from the workstation's internal clock and adjusted according to the time zone selected for the clock.

Each Clock icon has a property sheet that you use to specify the clock's appearance, alarm, time zone, and label.

When you copy the Clock icon from the Office Accessories divider to the desktop, the following default properties are in effect:

- **Clock display:**   [Analog]
- **Show hours and:**   [Minutes and seconds]
- **Alarm setting:**   (None)
- **Time zone:**   [Local]
- **Icon label:**   Clock

Figure 2-1 shows the Clock icon with the default properties displayed.

Figure 2-1 **The default Clock icon**
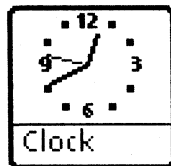
You can display several Clock icons on the desktop at one time and set different properties for each clock.

When you place the clock in a folder, the time is not displayed. When you move the clock to the desktop, the clock displays the current time.

You can copy, move, mail, file, or delete the Clock icon, but you cannot print it.

The clock preserves its properties when you boot the workstation, as well as when you mail or file the clock.

Clock displays

You can display the clock in either an analog or digital style.

Analog display

The analog display shows the current time, with an optional second hand and label. You set these properties on the Clock properties sheet.

Figure 2-2 shows three different views of the analog clock. The left clock displays a user-defined label; the middle clock shows a time zone; and the right clock displays the minute hand without the second hand or icon label.

Figure 2-2 **Examples of analog clock displays**

Digital display

The digital display shows the current time, with an optional seconds display, a.m./p.m. indicator, current date, and icon label that may be personalized or used to name a time zone. These properties are controlled through the Clock properties sheet.

Figure 2-3 shows three different digital clock displays. The left clock displays a 12-hour clock with the current date, time in hours and minutes, and the a.m. or p.m. indicator; the middle clock shows a 12-hour clock with hours, minutes, and seconds; and the right one displays the current date and a 24-hour clock.

Figure 2-3   **Examples of digital clock displays**

8:50	10:50:20	4:50:20
3-14-88		3-15-88
PM		
Clock	Honolulu	Australia

Alarm

You can set an alarm for each clock on the desktop. You can set the alarm to go off at 24-hour intervals by typing the desired time in the **Alarm Setting** box on the Clock properties sheet.

You can type the alarm time by using a 12-hour or 24-hour numbering format. If you use the 12-hour format, you can specify that an a.m. or p.m. indicator be displayed on the clock.

The 12-hour format uses numbering from 1:00 to 12:00, twice every 24 hours. The 24-hour format uses numbering from 0:00 to 23:59, once every 24 hours.

You specify the type of alarm that you want on the **Alarm Indicator** property. This property enables you to select a beep, a flash, or both. After the alarm is set, it goes off at 24-hour intervals.

The default property for the alarm is a.m. For example, if the alarm is set for 3:45 and p.m. is not specified, the alarm will go off at 3:45 a.m. If the 24-hour clock is used, and the time is obviously p.m. (for example, 14:52 is always 2:52 in the p.m.), a.m. or p.m. need not be specified.

The alarm goes off when the clock displays the alarm time set in the property sheet. The exceptions are as follows:

- If you are logged off at the time the alarm is set to go off, the alarm does not sound. When you log on, the alarm goes off immediately.

- If the clock is in a container when the alarm is set to go off, the alarm does not sound. The alarm properties are retained, but the alarm beep or flash is skipped. When the clock is returned to the desktop, the alarm is again activated.

- If the time zone is set for a zone other than local, the alarm uses that time zone. For example, if the alarm is set for 3:00 Mountain time and the local time is Pacific, the alarm will go off at 3:00 Mountain time.

- If the time zone is changed after the alarm is set, the alarm will go off according to the current time zone setting. For instance, if you use clock's time zone is set to Mountain time, and the alarm is set for 3:00, then the time zone is changed to Pacific time, and the alarm will go off at 3:00 Pacific time.

Time zones

The Clock application enables you to set the clock for a specific time zone, rather than for a specific time. The **Time Zone** properties available on the Clock properties sheet are [Local], [Non Local], and [Other].

Local time zone

When you select [Local] as the **Time Zone** property, the workstation displays the time in your current area.

You can change the default icon label, "Clock," to reflect the name of the time zone.

Non local time zone

When you select [Non Local] as the **Time Zone** property, two additional auxiliary menus appear on the Clock properties sheet: a time zone auxiliary menu and a daylight savings auxiliary menu.

When you make a selection in the time zone auxiliary menu, the workstation inserts the name of a prominent city in that time zone in the **Icon Label** box. For example if you select [Hawaii], Honolulu appears in the **Icon Label** box. If you have previously edited the icon label, however, the label is not changed.

Table 2-1 shows a list of the predefined time zones that are available on the Clock properties sheet.

Table 2-1   **Predefined time zones**

Time zone name	Offset	City name
Hawaii	-10	Honolulu
Pacific	-8	Los Angeles
Mountain	-7	Denver
Central	-6	Chicago
Eastern	-5	New York
Atlantic	-4	Santiago
Newfoundland	-3½	St. John's
GMT	0	London
Western Europe	1	Paris
Australian Western	8	Perth
Australian Central	9½	Adelaide
Australian Eastern	10	Sydney
Japan	9	Tokyo
China	8	Peking
Finland	2	Helsinki

The default time zone for this property is the local time zone. If the workstation cannot determine the local time zone, the default is Greenwich Mean Time (GMT).

When you select a zone in the daylight savings auxiliary menu and close the Clock properties sheet, the clock automatically displays the correct time.

Table 2-2 shows a list of the Daylight Savings Time (DST) zones, along with the first and last day of daylight savings in each zone.

Table 2-2   **Daylight Savings Time zones**

DST zone name	First day	Last day
U.S.	121	305
Australia	305	67
Britain and Ireland	91	303
Not observed	0	0
Western Europe	91	274

Other time zones

When you select [Other] as the **Time Zone** property, the predefined time zone auxiliary menu and daylight savings auxiliary menu are replaced with three new properties: the direction from GMT, the hour offset from GMT, and the minutes offset from GMT.

The defaults for these new properties are the same as the local time. If the workstation cannot determine the local time, GMT is used.

Clock in a container

When you place the clock in a container, such as a folder or file drawer, a representation of the clock appears in the open container. While the clock is in a container, the time is not displayed and you cannot view the property sheet.

When you return the clock to the desktop, it displays the current time as defined by the internal workstation clock.

Figure 2-4 shows the appearance of the Clock icon when it is in a container.

Figure 2-4 **The Clock icon in a container**
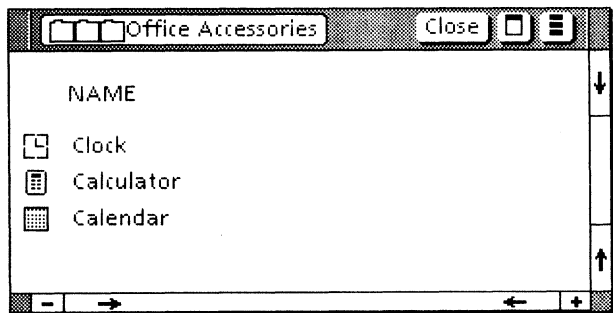
Property sheets for the clock

The clock is controlled through the Clock properties sheet. When you copy the Clock icon to the desktop, the default properties are analog. You can change these properties to reflect the appearance, time zone, alarm time, and label that you want.

Clock properties sheet—analog display

The Clock properties sheet—analog display (Figure 2-5) appears when you select the Clock icon, press < PROP'S >, and then select [Analog] as the **Clock Display** property.

Figure 2-5   **Clock properties sheet—analog display**
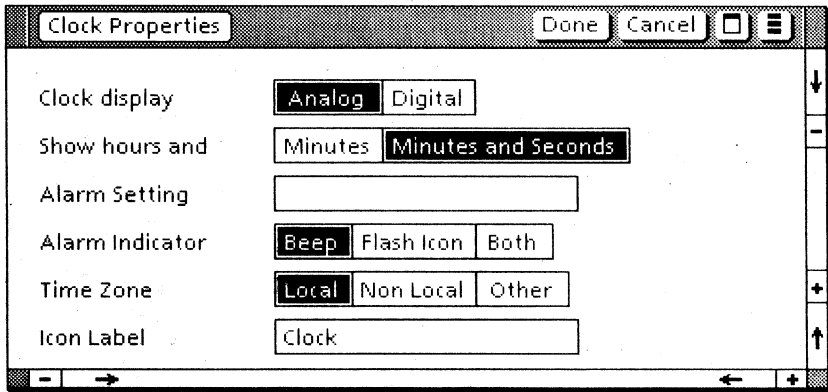
Clock display
> Used to select the type of clock displayed. The following properties are available:

[Analog]
> Shows the Clock icon in analog display.

[Digital]
> Shows the Clock icon in digital display.

Show hours and
> Used to indicate whether the second hand should be displayed. The following properties are available:

[Minutes]
> Displays the hours and minutes on the Clock icon.

[Minutes and Seconds]
> Displays the hours, minutes, and seconds on the Clock icon.

Alarm Setting
> Used to indicate the alarm time. You type the alarm time in this box.

> Table 2-3 shows the formats that you can use to specify the alarm time. The □ symbol represents the number(s) you type for the hour(s), minute(s), and second(s).

Table 2-3   **Examples of different alarm settings**

Alarm setting format	Example
□:□ □	1:30
□ □:□ □	12:25
□:□ □:□ □	3:50:10
□ □:□ □:□ □	10:22:07

Alarm Indicator
Used to indicate the type of alarm used. The
following properties are available:

[Beep]
Sounds a beep when the clock displays
the alarm time set in the **Alarm Setting**
property.

[Flash Icon]
Flashes when the clock displays the alarm
time set in the **Alarm Setting** property.

[Both]
Sounds a beep and flashes when the
clock displays the alarm time set in the
Alarm Setting property.

Time Zone
Used to indicate whether the clock shows the
current time in the local time zone, a non
local time zone, or a user designated time
zone. The following properties are available:

[Local]
Displays the local current time. The
predefined time zone auxiliary menu and
the daylight savings auxiliary menu are not
available.

[Non Local]
Displays a predetermined time zone other
than local. When you select [Non Local],
the following two properties appear:

Time zone auxiliary menu
An auxiliary menu used to select the
time zone desired. When you make a
selection in the predefined time zone
auxiliary menu, the workstation inserts
the name of a prominent city in that
time zone in the **Icon Label** box. If
you have previously edited the icon
label, however, the label is not
changed.

Daylight savings auxiliary menu
An auxiliary menu used to select the daylight savings zone desired. When you select a zone, the clock automatically adjusts to reflect the correct time.

Note: When you change the zone in the time zone auxiliary menu, the workstation sounds a beep and displays a warning message. The message requests that you to check the daylight savings time value on the clock. If you change the zone in the daylight savings auxiliary menu before you change the time zone, there is no beep or warning message.

[Other]
Displays a user-defined numerical offset time from GMT.

The default is [Local]. If the local time zone cannot be determined by the workstation, the default is GMT.

Icon Label
Used to name the Clock icon. If the label has not been previously edited, it automatically displays the name that you selected in the time zone auxiliary menu.

If you would like to display the Clock icon without a label, you must insert a space in the **Icon Label** box.

Clock properties sheet—digital display

The Clock properties sheet—digital display (Figure 2-6) appears when you select the Clock icon, press <PROP'S>, and then select [Digital] as the **Clock Display** property.

Figure 2-6   **Clock properties sheet — digital display**
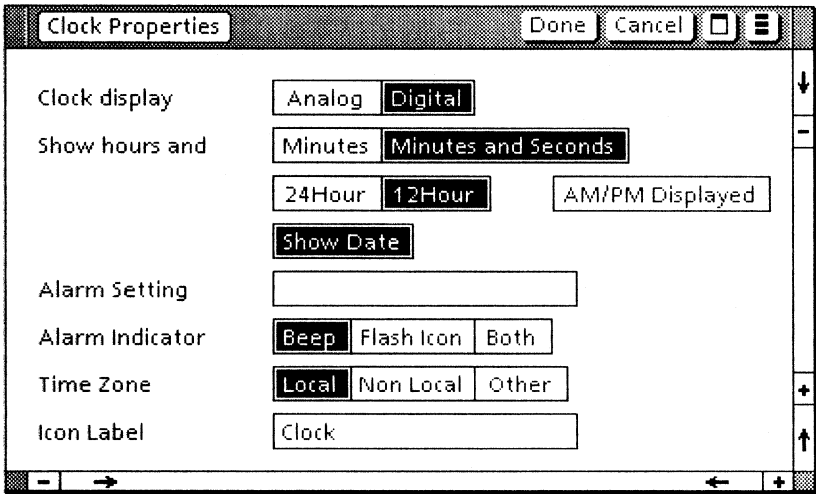
Most of the properties that appear on the digital display are the same as those appearing on the analog display. The additional properties that appear on the digital display are described below.

Show hours and

Used to indicate whether seconds should be displayed. The following properties are available:

[Minutes]

Displays the hours and minutes on the Clock icon.

[Minutes and Seconds]

Displays the hours, minutes, and seconds on the Clock icon.

[24Hour]

Displays the time using a 24-hour format.

[12Hour]
> Displays the time using a 12-hour format.

> The following property appears when you select [12Hour]:

[AM/PM Displayed]
> Displays an a.m. or p.m. indicator on the Digital Clock icon.

[Show Date]
> Indicates whether or not the date is displayed on the Clock icon.

# Clock properties sheet—numerical offset display

The Clock properties sheet—numerical offset display (Figure 2-7) appears when you select the Clock icon, press <PROP'S>, and then select [Other] as the **Time Zone** property.

When you select [Other], the time zone auxiliary menu and daylight savings auxiliary menu are replaced by three new properties: the direction from GMT, the hours offset from GMT, and the minutes offset from GMT.

The defaults for these properties are the same as the local time. If the workstation cannot determine the local time, GMT is used. The icon label does not automatically reflect these changes.

Most of the properties that appear on the numerical offset display are the same as those appearing on the analog and digital displays. The additional properties that appear on the numerical offset display are described below.

Figure 2-7 **Clock properties sheet—numerical offset display**
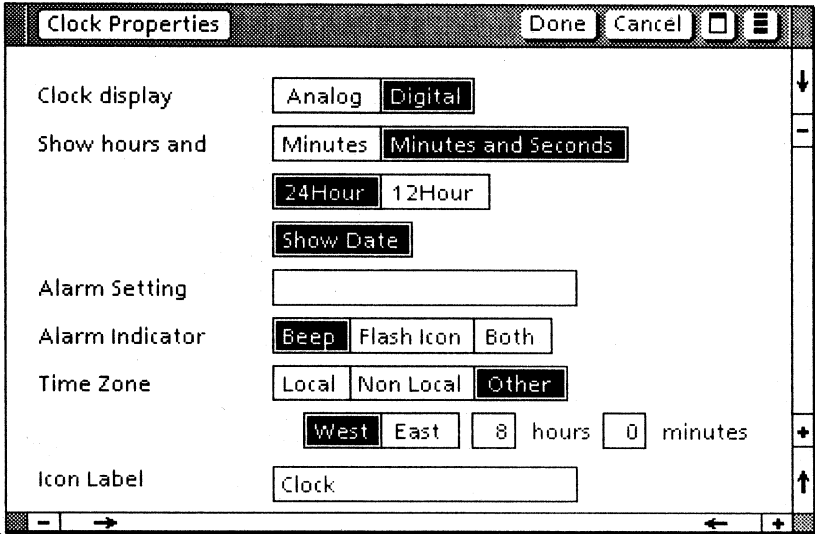
Time Zone
> Used to indicate whether the clock shows the current time in the local time zone, a non local time zone, or a user designated time zone. The following properties appear when you select [Other]:

[West][East]
> Indicates the offset direction from GMT.

Hours
> Indicates the hours offset from GMT.

Minutes
> Indicates the minutes offset from GMT.

> If the value that you entered in the **Hours** or **Minutes** box is incorrect or missing, a message is displayed.

Procedures for using the clock

The procedures for using the clock are described in this section.

Changes made to the property sheet take effect, and are reflected in the clock's appearance, when the property sheet is closed.

Activating the clock

1. Select the directory and press < OPEN >.

2. Select the Workstation divider and press < OPEN >.

3. Select the Office Accessories divider and press < OPEN >.

4. Select the Clock icon and press < COPY >.

5. Move the pointer to a location on the desktop and click the left mouse button.

Setting the analog or digital display

1. Select the Clock icon and press < PROP'S >.

2. Select [Analog] or [Digital] as the **Clock display** setting.

Displaying seconds

To add a second hand to an analog display or to display seconds on a digital display, select the [Minutes and Seconds] property in the **Show hours and** property.

Setting the hour format

To set the digital clock display to a 24-hour or 12-hour format, select [24Hour] or [12Hour] in the **Show hours and** property.

Setting the a.m. or p.m. indicator

1. Select [12Hour] in the **Show hours and** property. [AM/PM Displayed] appears.

2. Select [AM/PM Displayed].

Setting the date

To show the date on the digital clock display, select [Show Date] in the **Show hours and** property.

Setting the alarm

To set the alarm on a Clock icon, type the time for the alarm in the **Alarm Setting** box.

Refer to Table 2-3 for examples of alarm setting formats.

Note: The alarm time may be typed in using either the 12-hour or the 24-hour numbering format. You must designate a.m. or p.m. in the **Alarm Setting** box, using the 12-hour format.

Setting the alarm indicator

To set the alarm indicator, select the desired **Alarm Indicator** property: [Beep], [Flash Icon], or [Both].

Changing the time zone to Local

1. Select [Local] in the **Time Zone** property.

2. Select [Done] or press <PROP'S> to close the property sheet.

Changing the time zone to Non Local

1. Select [Non Local] in the **Time Zone** property.

2. Select a zone from the time zone auxiliary menu.

3. If necessary, select a zone from the daylight savings auxiliary menu.

4. Select [Done] or press <PROP'S> to close the property sheet.

Changing the time zone to Other

1. Select [Other] in the **Time Zone** property.

2. Select the [West] or [East].

3. Select the number in the **Hours** box and press <DEL>.

4. Type the desired number in the box.

5. Select the number in the **Minutes** box and press <DEL>.

6. Type the desired number in the box.

7. Select [Done] or press <PROP'S> to close the property sheet.

3.   Calculator

The calculator provides the capabilities of a hand-held programmable calculator. You can combine these capabilities with ViewPoint's text and windowing to easily integrate calculations and their results into your reports or other documents.

The calculator includes user-programmable function keys and a full range of trigonometric functions. You can program calculations you use in weekly or monthly reports. Then, you just enter the new figures and select the appropriate function keys. The calculator automatically computes the results.

Since the calculator is represented by an icon, you can put several calculators on your desktop at once. You can customize each for financial, engineering, or another specific type of calculation. In addition, you can mail copies of these customized calculators so coworkers can share the same increases in productivity.

## Key concepts of the calculator

The Calculator application uses its own icon and associated window to evaluate expressions you enter. The Calculator window includes several components that help you enter the expressions you need to evaluate. The expressions must comply with certain rules of syntax, but you can enter most expressions just as you would write them on a piece of paper.

Calculator icon

The Calculator icon, shown in Figure 3-1, is the desktop representation of the closed calculator.

Figure 3-1 **Calculator icon**
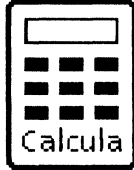
The icon is similar to a document icon in that you can copy, move, mail, file, or print the Calculator icon. When you open the Calculator icon, you can view its contents and use the calculator.

Calculator window

The Calculator window appears when you open a calculator icon. You use the Calculator window for all calculations performed by the calculator. The Calculator window and the keypad that appears with it are shown in Figure 3-2.

The Calculator window consists of eight components, which are explained in greater detail in later sections.

- The calculator menu includes five commands that help you manage your use of the calculator.

- The Log window is where you tell the calculator what you want it to calculate. It is called a Log window because it keeps a log of your instructions and results that appear in the window.

- The calculator function buttons let you use the calculator's built-in functions, such as trigonometric functions.

Figure 3-2 Calculator window and keypad
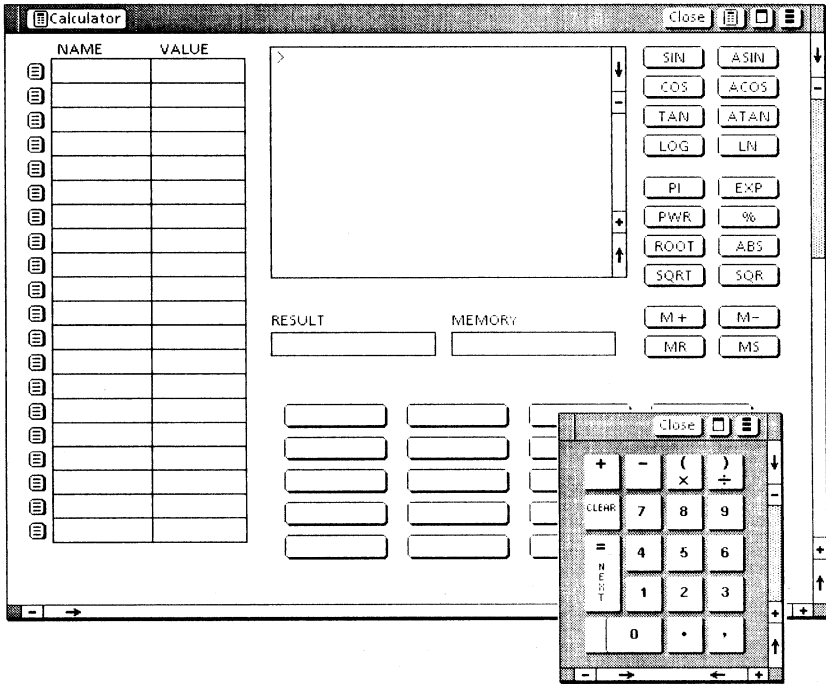
- The RESULT register displays the result of the most recent calculation.

- The MEMORY register displays the value stored in the memory register.

- The MEMORY register buttons let you move information to or from the MEMORY register.

- The user-programmable function buttons let you program new functions for immediate recall when you select the function buttons.

- The storage variable cells and menus let you assign names to variables that appear often in calculations. You may also assign values, or you may let the calculator compute the values.

Keypad

The calculator keypad displays automatically when you open the Calculator window the first time. You can use the mouse to select numbers and other keys on the keypad to make rapid entries into the Log window or other documents.

Calculator terminology

The expressions you place in the Log window must be in a form the calculator can recognize. In many cases, such as 32 + 4 for example, the calculator recognizes expressions that are in the same form as you would write them on a piece of paper.

This section briefly discusses commonly used terms associated with solving expressions. Some of these terms appear on Calculator property sheets. Others help you select the correct format to solve specific problems using the calculator. If you are already familiar with these terms, you can skip forward to the following section.

Constant
A quantity whose value is fixed. For example, the number 2 is a constant.

Variable
A quantity whose value is not fixed. A variable can assume any of a set of values. In the equation $d = st$, the d (distance), s (speed), and t (time) are variables.

Dependent variable
A variable whose value depends on, or is determined by, the value of one or more other variables. In $d = st$, the distance traveled (d) is the dependent variable. Its value depends on the values of s and t, the speed, and the amount of time traveled.

Independent variable

A variable whose value you can set independently of the other variables. In $d = st$, the speed (s) and the time (t) are the independent variables.

Note: Whether a variable is independent or dependent may depend only on how you set up the equation. If you wanted to know how long it would take to travel a certain distance at a certain speed, the equation becomes $t = d/s$. In this equation, t is the dependent variable, while d and s are the independent variables.

Function

A function defines a relationship between two or more variables such that when you know the values of one (or more), the value of the final variable is determined. You could think of $d = st$ as being a function. The distance traveled (d) is a function of s and t, the two independent variables.

- Calculator-defined function: Sixteen built-in functions automatically compute their values when you supply values for the independent variables. These functions, which are covered later in detail, include trigonometric and logarithmic functions.

- User-programmable function: A function you can define and assign to one of the user-programmable function keys.

  For example, you could name a function button DIST and define the function as SPEED x TIME, where x represents multiplication. Then, whenever the calculator had values available for SPEED and TIME, and you select DIST, the calculator automatically calculates the product of SPEED and TIME.

Argument

Argument is a word commonly used to mean the independent variable of a function.

Argument separator

An *argument separator* is the character you place between arguments of functions that require more than one argument. A property on the Calculator property sheet determines whether the calculator will expect a comma or a semicolon as the argument separator.

Operation

A process or action, such as addition, subtraction, or substitution, performed in a specified sequence and in accordance with rules of procedure.

Operator

A symbol, such as a plus sign or a minus sign, representing a mathematical operation.

Operand

The operand is the object operated on. For example, variables, constants, functions, or parenthesized expressions can be operands. In the expression $4 + (5 \times 2)$, the numbers are the operands. The plus sign and multiplication sign are the operators.

Operator positioning

You may position operators before, after, or between the operands. The calculator applies operators to the operands according to the type of operator and the operator's position.

- Before: The plus sign or minus sign that specifies whether a number is positive or negative is an example of an operator that comes before an operand.

$$+1 \qquad -2 \qquad ABS(-7)$$

- After: The percent sign and the factorial sign are operators that come after the operand.

    15%   5!

- Between: The signs for addition (+), subtraction (-), multiplication (× or *), division (÷ or /), and raising a number to a power (**) are examples of operators that apply to operands on both sides.

    4 + 3   4**2   7 × 5/4

Memory

A temporary storage cell, or register, used to store intermediate results for use in further calculations.

Expression

An expression is a sequence of operators and operands that form a set of instructions. The calculator carries out the instructions, thereby producing a result.

Property sheets for the calculator

There are three property sheets associated with the calculator.

- Calculator property sheet
- Calculator Format property sheet
- Function Button property sheet

Calculator property sheet

You use the Calculator property sheet to:

- Name the Calculator icon.

- Keep a record of up to the last 2,000 lines of calculations done in the Log window.

- Change the character used as the decimal point in calculations, and change the character used to separate the arguments the functions use.

The Calculator property sheet (Figure 3-3) is the property sheet for the Calculator icon.

Figure 3-3   **Calculator property sheet**
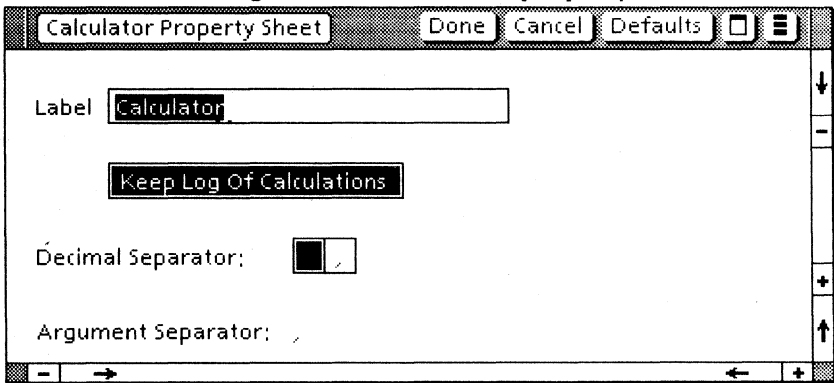
Label

Displays the name of the calculator. The label appears on the Calculator icon and in the title area of the Calculator window. The default **Label** is "Calculator."

[Keep Log of Calculations]

[Keep Log of Calculations] is the default setting, so each line you enter in the Log window is saved. If you deselect [Keep Log of Calculations], the record of entries during the session is erased when you close the Calculator window.

Keeping the log lets you have a record of calculations that produced key results. You can copy selected sections of the log into a document, and then clear the log when the record is no longer needed in the Log window.

The Log window can hold up to 2,000 lines or 65,536 characters. Reaching either limit produces an error message advising you that you need to clear the Log window. When that happens, copy to a document any portions of the Log window's contents that you want to save. Then, select [Clear Log Window] in the calculator menu.

Note: This property affects only the Log window. The variables and their values in the storage variable cells, as well as the functions programmed in function buttons, are saved automatically when you end a calculator session.

Decimal Separator

You may choose either a period or a comma as the decimal separator that separates a whole number from its decimal fraction. For example, 1.43 uses a period to separate the whole number, 1, from the decimal fraction. Some languages use a period and some use a comma. The default is a period.

Argument Separator

The argument separator separates the arguments in functions that require more than one argument. The default is a comma. For example, the function that evaluates the square root of 7 is Root(2,7). The arguments are 2 and 7. The argument separator is the comma between the two numbers.

The **Decimal Separator** and the **Argument Separator** are always different characters. If you change the decimal separator to a comma, the argument separator changes automatically to a semicolon. If you then change the decimal separator back to a period, the argument separator becomes a comma again.

Calculator Format property sheet

You use the Calculator Format property sheet (Figure 3-4) to:

• Specify the format that determines how the results of calculations are displayed.

• Specify the accuracy of the result in terms of the number of digits displayed.

• Specify whether the angles used in trigonometric functions are expressed in degrees or radians.

Figure 3-4   **Calculator Format property sheet**
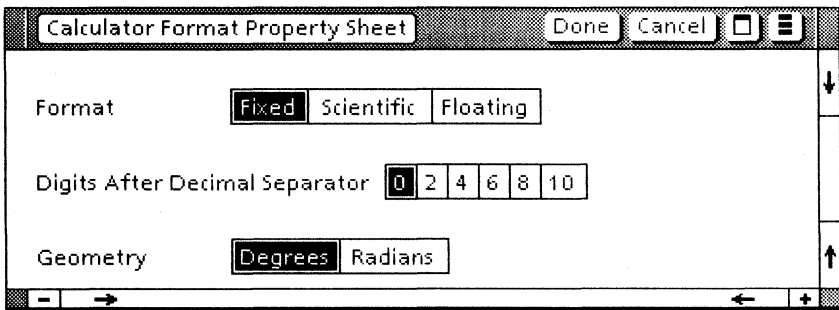
You display the Calculator Format property sheet by selecting [Change Format] in the calculator auxiliary menu. The menu is in the header of the Calculator window.

You can specify the following combinations using the Calculator Format property sheet:

- [Fixed] **Format** and **Digits After Decimal Separator**

- [Scientific] **Format** and **Significant Digits**

- [Floating] **Format** and **Significant Digits**

Your choice in the **Format** property also determines whether the **Digits After Decimal Separator** property or the **Significant Digits** property appears on the property sheet. Figure 3-5 shows a Calculator Format property sheet with [Scientific] **Format** and **Significant Digits** selected.

Figure 3-5   **Calculator Format property sheet with [Scientific] Format selected**
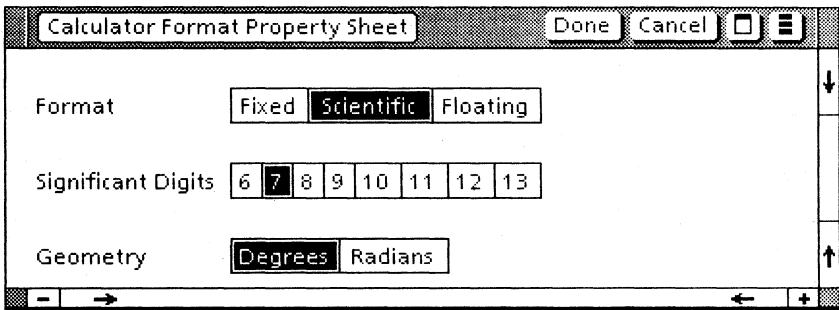
Your choice in **Digits After Decimal Separator** or **Significant Digits** determines how accurately the results of calculations display in the RESULT register.

For example, when working with dollars and cents, you display results with two digits after the decimal point. However, in scientific calculations,

you often need several more places of accuracy. Additionally, when the most important digits are well away from the decimal point, writing the entire number in regular digits can produce a result that is difficult to read and to interpret.

Format
Specifies the type of format used to display the results of calculations.

[Fixed]
When you select [Fixed], all results display with a specific number of digits appearing to the right of the decimal separator.

[Scientific]
When you select [Scientific], all results display in scientific notation. Scientific notation is a compact method of displaying numbers over the entire range from very large to very small.

Scientific notation displays the number in two parts:

• The specified number of **Significant Digits**, with one digit to the left of the decimal point.

• The letter E followed by the number of places the decimal point had to be moved to leave only one significant digit to the left of the decimal point. The number after the E is positive for results that are greater than 1 and is negative for numbers less than 1.

For example, a result of one billion (1,000,000,000) would be 1.00000E9. A result of one billionth (1/1,000,000,000) would be 1.00000E-9. You can convert a number from scientific notation by multiplying the significant digits by 10 raised to the number following the E. A billion is equal to 1.0 times 10^9.

[Floating]

> When you select [Floating], all results display in floating point notation. This is similar to scientific notation. However, floating point notation allows the decimal point to "float" left or right, depending on the magnitude of the result and the number of significant digits you specify. Instead of restricting the decimal point to always come after the first digit, the decimal point floats toward the appropriate end of the significant digits.
>
> For example, 1533.4 would be represented as 1.53340E3 in scientific notation (with six significant digits) and as 1533.4 in floating point notation.

Digits After Decimal Separator

You use this property with the [Fixed] **Format**. The choices are the following:

0	2	4	6	8	10

Significant Digits

You use this property with the [Scientific] or [Floating] **Format**. The choices are the following:

6	7	8	9	10	11	12	13

Geometry

Specifies whether degrees or radians are used in the arguments of trigonometric functions. Your selection specifies the geometry of the angles you enter as arguments and the angles that are returned in the [Results] register when the result is an angle.

Note: If you keep more than one calculator on your desktop, be sure you are aware of the **Geometry** property specified for the calculator you are using. Many numbers are valid entries as either degrees and radians.

The calculator uses the **Geometry** property to decide whether to treat your input as a number of degrees or a number of radians. If you think you are entering degrees, but the **Geometry** is set as [Radians], the result will be erroneous.

The default settings on the Calculator Format property sheet are [Floating] **Format** with seven significant digits and a **Geometry** property of [Degrees]. When you select [Fixed] **Format**, the default value for **Digits After Decimal Separator** is 0.

Function Button property sheet

You use this property sheet to assign frequently used expressions to function buttons. Each of the 20 user-programmable function buttons has its own property sheet. Figure 3-6 shows a Function Button property sheet.

Figure 3-6   **Function Button property sheet**
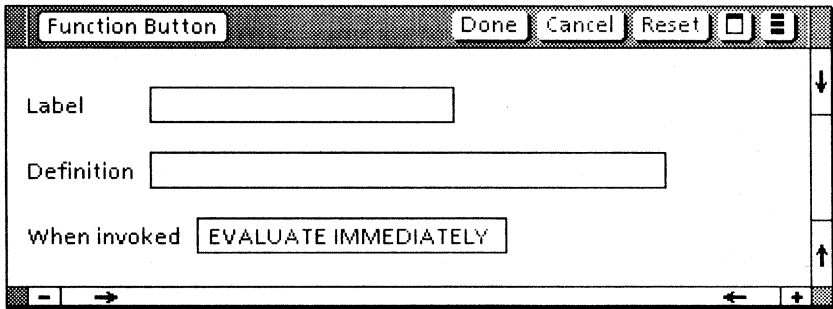
You display a Function Button property sheet by selecting [Disable Buttons] in the calculator auxiliary menu. The message "Function buttons disabled" appears in the message area of the desktop. Once you have disabled the buttons, selecting a user-programmable function button displays the Function Button property sheet.

After you finish programming the function buttons, you must select [Enable Buttons] in the calculator auxiliary menu. The message "Function buttons enabled" appears in the message area of the desktop. This message indicates that you can now select a function button to automatically place its name on the current line of the Log window.

Label

Label is the property you use to assign a name to the function button. You can use that name in other expressions to evaluate the expression you define for the function button. The label, or as much of it as will fit, appears on the function button.

The label can include any character not recognized by the calculator as an operator, function, argument separator, decimal separator, or blank space. The following characters <u>cannot</u> be used as part of a function button name: +, -, *, ?, x, ÷, %, !, (,), [,], a tab, a blank space, a new line (carriage return), a comma, or a semicolon. Function names cannot begin with a number.

You can assign almost any name besides those used on the calculator function buttons and the reserved words: Store, Memory, and Result.

The label appears on the current line of the Log window when you select the function button and function buttons are enabled.

Definition

The **Definition** is the expression you want the user-programmable function button to represent. You can include any calculator function, user-defined function, or storage variable in the expression. The same rules of syntax that apply to expressions entered in the Log window apply to expressions entered into **Definition**.

When Invoked
[Evaluate Immediately] causes the calculator to evaluate the expression immediately after you select the function button.

If you deselect [Evaluate Immediately], selecting the function button only places the label on the current line of the Log window. You may put additional operators or functions on the current line before evaluating the complete expression.

The [Evaluate Immediately] option is deselected when you open the property sheet the first time.

Calculator window

You display the Calculator window by selecting a Calculator icon and pressing <OPEN>. You use the Calculator window to perform arithmetic, algebraic, and trigonometric calculations; specify user storage variables; and program user function buttons.

This section discusses the calculator window's eight components:

- The calculator menu
- The Log window
- The calculator function buttons
- The RESULT register
- The MEMORY register
- The MEMORY register buttons
- The user-programmable function buttons
- The storage variable cells

Calculator menu

The calculator menu looks like a small calculator icon in the header of the Calculator window. Figure 3-7 shows the commands that appear when you select the menu.

Figure 3-7 **Calculator menu**

```
[▦]
─────────────────────────
Disable Buttons
Change Format
Show Keypad
Clear Log Window
Clear Variable Values
```
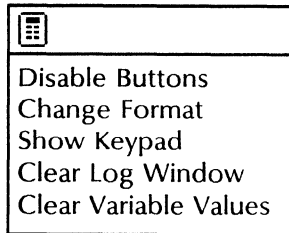
[Disable Buttons/Enable Buttons]
This command lets you temporarily turn off the function buttons so that you can change items on the Function Button property sheets. You use this command when you want to program a function button.

When you select [Disable Buttons], the menu command toggles and becomes [Enable Buttons]. Select [Enable Buttons] to return all user-programmable function buttons to their normal roles, and toggle the command back to [Disable Buttons].

[Change Format]
Displays the Calculator Format property sheet.

[Show Keypad]
Displays the Keypad window on the desktop. Use this command to redisplay the keypad if you selected [Close] on the keypad and did not close the calculator.

Note: This command is a quick way to move the keypad into sight on the desktop when the keypad is still open but hidden beneath other documents.

[Clear Log Window]
Deletes the contents of the Log window. A confirmation message appears in the desktop header to make sure that you really want to delete your previous calculations.

[Clear Variable Values]
Clears the VALUE column of all the storage variables, and leaves the NAME properties intact. A confirmation message appears in the desktop header to make sure that you really want to delete all the values in the storage variables.

Log window

The Log window is a separately scrollable (but not movable) window within the Calculator window. Like the strip of paper running through a desktop calculator, the Log window is the "electronic paper" on which you enter all numbers and expressions for evaluation.

You can copy sections of the Log window into other documents to have a record of the calculations and the intermediate results.

Think of the contents of the Log window as the two parts shown in Figure 3-8.

Figure 3-8   **An example Log window showing the body and current line**

```
> ROOT(3,27)
> 3.00
> PI × SQR (50)
> 7853.98      Body
> 4!
> 24.00
> A + B - C STORE E
> 82                      Current Line
```
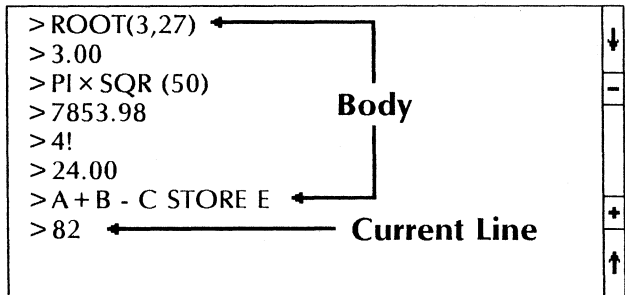
- The current line of information is the bottom line in the Calculator window. As a minimum, the current line has a " > " at the left edge of the Log window.

<u>The current line is the only editable line in the Log window</u>. Characters you place in the Log window enter on the current line. When you want to enter a new expression, you can either delete the contents of the current line or use < SKIP/NEXT > to move the caret to a new current line.

- The body of the Log window is everything above the current line. Each time you enter a new current line or evaluate an expression on the current line, the old current line moves into the body. This usually forces the top line of the body out of view as the log scrolls to fit the new current line in the window.

  You can use the scroll bar to bring the upper part of the body back into the Log window. You can select and copy portions of the body. You may not edit the body except to delete all information in the body using the [Clear Log Window] command mentioned earlier.

  Note: You cannot select the log body and the current line simultaneously.

When you open the Calculator window, a flashing caret appears on the current line of the Log window. The message, "Type an arithmetic expression at the flashing caret, and then press < NEXT > for the result" appears in the desktop message area. You can use the standard keyboard, the keypad, and the function buttons to enter expressions into the Log window.

Valid calculator expressions can be of any length, although many expressions fit on one line. However, as you type information into the Log window, the caret automatically advances to the next line when the right margin of the window is reached. The window automatically scrolls upward to keep the information you type in view.

The <COPY> key provides a convenient way to enter information onto the current line. The following examples are situations where the <COPY> key may save keystrokes:

• All or part of the expression already exists in another document.

• All or part of the expression already exists in the body of the Log window. This is particularly helpful if you made a syntax error and tried to evaluate the expression. The expression moves up into the body, the new current line is blank, and an error message appears in the message area. In many cases, you can just copy the expression back onto the current line and edit it like regular text until you get the proper format.

• You can copy the NAME of a storage variable onto the current line instead of recalling its value with the [Recall] command. This is useful if you are developing an expression on the current line that you were later going to copy into the **Definition** parameter of one of the user-programmable function keys. In that case your expression would have the variable's NAME instead of just its current value.

• You could keep a document open with names of commands Store, Memory, and Result. Then, you could copy one of those words onto the current line when you need the command.

Calculator function buttons

The calculator window includes 16 function buttons. Use these buttons to enter keywords representing predefined arithmetic, algebraic, and trigonometric functions. The calculator function buttons are shown in Figure 3-9.

When you need one of the functions, select the corresponding function button. The keyword

Figure 3-9 Calculator function buttons

Sine	SIN	ASIN	Arc sine
Cosine	COS	ACOS	Arc cosine
Tangent	TAN	ATAN	Arc tangent
Base 10 Logarithm	LOG	LN	Natural Logarithm
Pi	PI	EXP	Natural Exponent
Power	PWR	%	Percent
Root	ROOT	ABS	Absolute Value
Square Root	SQRT	SQR	Square

name on the button automatically appears in the Log window, even if you were not already selected into the Log window.

In most cases, a left parenthesis appears just after the keyword. The parenthesis indicates that you need to enter one or two arguments and a closed parenthesis after the keyword. Only the constant, Pi, and the percent sign (%) do not require arguments after the keyword. The function buttons <PWR> and <ROOT> require two arguments.

The following sections briefly discuss each function's purpose and format. Examples of how each function and its result would appear in the Log window are included.

Arithmetic functions

ABS Returns the absolute value of an argument

Format: ABS(argument)

This function returns a positive number of the same magnitude as the value of the argument.

Example: > ABS(-3.5)
                 > 3.50

SQR Squares the value of the argument

Format: SQR(argument)

This function multiplies the argument times itself. In the following example, SQR(5) is 5 × 5.

Example: > SQR(5)
                 > 25.00

SQRT Calculates the square root of the argument

Format: SQRT(argument)

This function computes the square root of the argument. The value of the argument must be non-negative or an error message appears.

Example: > SQRT(100)
                 > 10.00

Algebraic functions

EXP Raises "e" (2.71828...) to a specified power

Format: EXP(argument)

This function raises "e" to the power specified by the argument.

Example: > EXP(2)
                 > 7.39

LOG   Calculates the common logarithm (base 10)

Format: LOG(argument)

This function produces the common logarithm (log to the base 10) of the value of the argument. The common logarithm is the power to which 10 has to be raised to produce the value of the argument.   The argument must be a positive value or an error message appears.

Example: > LOG(27)
                > 1.43

LN   Calculates the natural logarithm

Format: LN(argument)

This function produces the natural (Naperian) logarithm of the value of the argument.   The natural logarithm is the power to which "e" (approximately 2.71828) has to be raised to produce the value of the argument.   The argument must be a positive value or an error message appears.

Example: > LN(10)
                > 2.30

%   Calculates percent

Format: argument%

Place the argument just before the keyword (the percent sign) in an expression.   Normally, you multiply the percentage by another number to produce a result.

Example: > 50% × 12
                > 6

Pi   A constant; approximately 3.14159265359 when displayed to 12 significant digits

Formats: Pi operator argument

Argument operator Pi

Pi operator function (argument)

The constant Pi is the ratio of the circumference of a circle to its diameter. The formats shown are typical of using Pi just as you would use any other constant.

Example: >   Pi × 6
                >   18.85
                >   6 × Pi
                >   18.85
                >   Pi × SQR(5)
                >   78.54

PWR   Raises an argument to a specified power

Format: PWR(argument X,argument Y)

This function raises the first argument (X) to the power indicated by the second argument (Y). Place two arguments within parentheses. Use the argument separator you specified on the Calculator property sheet.

Example: >   PWR(10,2)
                >   100.00

ROOT Calculates the root of an argument

Format: ROOT(argument N,argument Y)

This function takes the Nth root of argument Y. You must place two arguments within the enclosed parentheses and separate them by the argument separator selected on the Calculator property sheet. The argument Y must be a positive value or an error message appears.

Example: >   ROOT(3,27)
                >   3.00

!   **Factorial; calculates 1 × 2 × 3 × . . . × N**

Format: argument!

The factorial function calculates the product of all positive numbers from 1 to the given number, N. You represent the factorial function by placing an exclamation mark after a number. For example, 5! = 1 × 2 × 3 × 4 × 5 = 120. The argument must be a positive integer or an error message appears.

Example: > 5!
                  > 120.00

Note: Use the regular exclamation point to specify the factorial function.

Trigonometric functions

The calculator function buttons include six trigonometric functions. You can combine these to make expressions that will represent any trigonometric function.

When you use the trigonometric functions in your calculations, you should:

•   Know whether the **Geometry** property on the Calculator Format property sheet is set to [Degrees] or [Radians].

   —   Consistently input all angles in either degrees or radians, depending on the setting of the **Geometry** property.

   —   Recognize that the inverse trigonometric functions will produce results in the same units set in the **Geometry** property.

•   Know that inverse trigonometric functions have more than one correct answer. The discussions that follow list the conventions the calculator uses in determining which answer to return for each inverse trigonometric function.

If you are unfamiliar with these concepts, you should review a basic trigonometry text before using the trigonometric function buttons.

The following examples include an (R) or a (D) to show you whether the **Geometry** setting was [Radians] or [Degrees]. The actual Log window does <u>not</u> have those reminders.

COS   Calculates the cosine of the argument

Format: COS(argument)

Returns the cosine of the angle in the argument.

Example: > COS(30)   (D)
                > .87

ACOS   Calculates the arc cosine of the argument

Format: ACOS(argument)

The arc cosine (inverse cosine or $\cos^{-1}x$) calculates the angle whose cosine is the value of the argument. ACOS returns an angle between 0° and 180° or between 0 and 3.14 radians.

Example: > ACOS(.5)
                > 60.00   (D)
                > ACOS(.5)
                > 1.05   (R)

SIN   Calculates the sine of the argument

Format: SIN(argument)

Returns the sine of the angle in the argument.

Example: > SIN(.5)   (R)
                > .48

ASIN   Calculates the arc sine of the argument

Format: ASIN(argument)

The arc sine (inverse sine or $\sin^{-1}x$) calculates the angle whose sine is the value of the

argument. ASIN returns an angle between -90°
and + 90° or -1.57 radians and + 1.57 radians.

Example: > ASIN(.5)
                > 30.00   (D)
                > ASIN(.5)
                > 0.52   (R)

TAN   Calculates the tangent of the argument

Format: TAN(argument)

This function calculates the tangent of the angle
specified in the argument.

Example: > TAN(30)   (D)
                > .58

ATAN   Calculates the arc tangent of the argument

Format: ATAN(argument)

The arc tangent (inverse tangent or $\tan^{-1} x$)
returns the angle whose tangent is the value of
the argument. ATAN returns an angle between
-90° and + 90° or -1.57 and + 1.57 radians.

Example: > ATAN(.57735)
                > 30.00   (D)
                > ATAN(.57735)
                > 0.52   (R)

RESULT register

The RESULT register (Figure 3-10) is located
below the Log window. The register contains the
value of the last expression evaluated by the
calculator. This value can be easily added to,
subtracted from, or copied to the MEMORY
register or the calculator storage variables.

When you apply the result to the MEMORY
register or the calculator storage variables, the
value in the RESULT register is unchanged. The
RESULT register changes only when you evaluate
another expression in the Log window.

Figure 3-10 **RESULT and MEMORY registers**
and the MEMORY register buttons

RESULT	MEMORY	M+	M−
		MR	MS
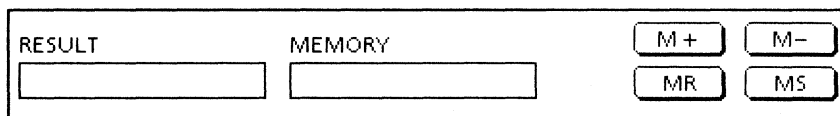
Note: You can clear the RESULT register by selecting < =/NEXT> twice in succession. The first < =/NEXT> creates a new, blank current line. The second < =/NEXT> tries to evaluate the blank line. This creates another blank current line and blanks the RESULT register.

MEMORY register

The MEMORY register (Figure 3-10) is a general purpose storage cell similar to the MEMORY register on a hand-held calculator. You can use the MEMORY register buttons, discussed in the next section, to move data into and out of the MEMORY register.

MEMORY register buttons

The four MEMORY register buttons (Figure 3-10) move numbers into and out of the MEMORY register.

- <M+> adds the RESULT register to the MEMORY register. You could use this key and the MEMORY register to keep a running total of results of intermediate calculations.

- <M-> subtracts the RESULT register from the MEMORY register. You could use this key and the MEMORY register to keep track of a remaining balance in budget calculations.

- <MR> recalls the value in the MEMORY register and appends that number to the current line in the log window. Use this key

when you want to bring back the result of intermediate calculations to use in the next calculation.

- <MS> stores the contents of the RESULT register in the MEMORY register. Use this key to save the result of an intermediate calculation for use in later calculations.

User-programmable function buttons

The Calculator window includes 20 programmable function buttons. These buttons are similar to the calculator function buttons, except that you can name and define the functions or expressions.

The user-programmable function buttons appear below the RESULT and MEMORY registers. The buttons are blank until you assign a label. Figure 3-11 shows the user-programmable function buttons with one button labeled. The Function Button property sheet for the Volume button also appears in Figure 3-11.

You use the Function Button property sheet to:

- Label the button.

- Program the expression you assign to the button.

- Specify if the expression is to be evaluated immediately when the button is selected.

The Store, Memory, and Result commands

The Store, Memory, and Result commands are useful when you program a sequence of instructions. These commands let you automatically move the results of one calculation for use in additional calculations. You can type these commands into the current line or into the **Definition** property for a user-programmable function button.

Figure 3-11 **User function buttons with a Function Button property sheet**
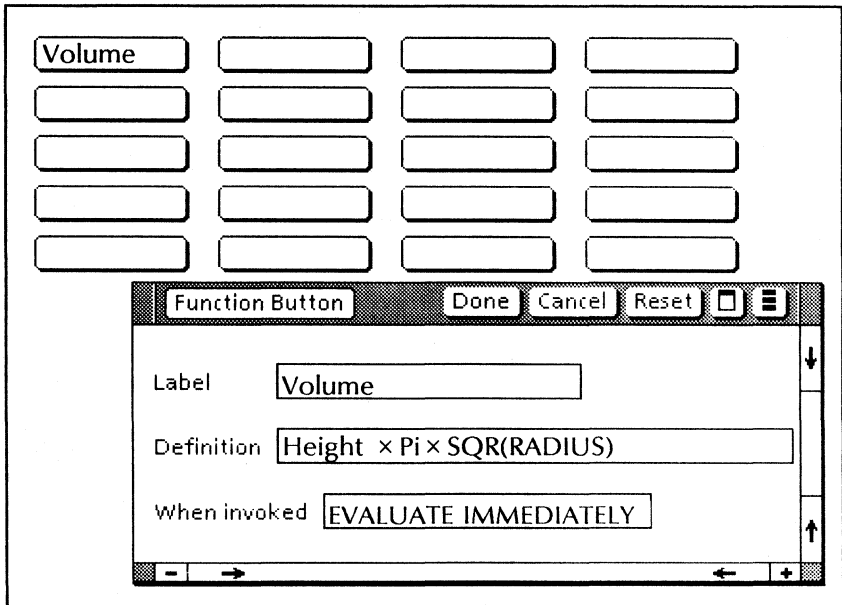
Note: Case is not important. You can type the Store, Memory, and Result commands in uppercase or lowercase letters. When you use these commands in expressions, be sure you put a space before each command.

Store

Store works like the <MS> key or the [Store] command in the Storage Variable auxiliary menu. When " Store Memory" follows an expression, the result is stored in the MEMORY register just as if you had selected <MS>. When a storage variable NAME follows Store, the calculator stores the result in that variable just as if you had selected [Store] in the Storage Variable auxiliary menu.

Memory

Memory works like the <MR> key. Memory recalls the current value in the MEMORY register, and appends the value to the current line of the Log window. For example, MEMORY + 5 would produce a new result by adding 5 to the value in the MEMORY register.

Result

Result appends the current value in the RESULT register to the current line of the Log window. For example, RESULT + 5 produces a new result by adding 5 to the value in the RESULT register.

You can also type these commands into the current line of the Log window. However, the memory function buttons and the [Store] command are more convenient.

Figure 3-12 shows an example of a calculator session using the Store and Memory commands.

Figure 3-12 **A calculator session using Store, Memory, and Result commands**
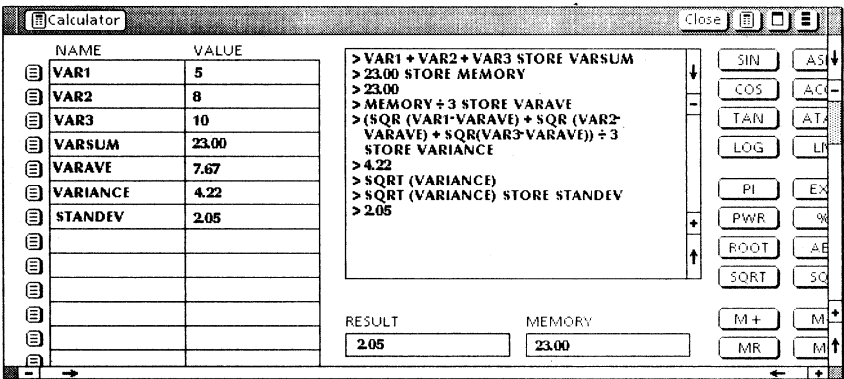
Order of performing operations

When an expression includes more than one operator, the order in which the calculator performs the operations can affect the result. When you write expressions, you need to understand the order in which the operations will be performed.

The following are rules that determine the order in which operations are performed:

Rule 1 **Higher priority operations are performed before lower priority operations.**

Operations in the lower numbered groups are performed before higher numbered groups.

Priority Groups	Operations
Group 1:	Unary minus % !
Group 2:	**
Group 3:	* / × ÷
Group 4:	- +
Group 5:	STORE

Rule 2 **Except for **, operators with the same precedence are evaluated from left to right.**

The double asterisks, which represent the function of raising an argument to a given power, are evaluated right to left by the calculator. For example, the calculator evaluates the expression 2**3**4 the same as if the expression were 2 raised to (3**4).

Rule 3 **Expressions within parentheses are evaluated before those outside parentheses.**

For example, in the expression $2 + 20 \div (2 \times 4)$, the 2×4 is evaluated as 8, before the division takes place. The overall result is 4.5 since division is a higher priority than addition.

Without the parentheses, the calculator would evaluate the expression in a different order and produce a different result. In $2 + 20 \div 2 \times 4$, the first operation performed is to divide 20 by 2. The result of that operation is 10, which is then multiplied by 4. The result, 40, is then added to 2 to produce a final result of 42.0.

Note: You can use the right and left parentheses interchangeably with the right and left brackets: [ ].

Variable-value substitution

Variable-value substitution is a convenient way to enter new values into your user-programmable functions. You can substitute values in the current line of the log window similar to the way you enter arguments with calculator functions.

For example, in an earlier example, the function button DIST represented the expression of SPEED times TIME. When evaluated on the current line, DIST would multiply the current value of the storage variable SPEED times the current value of the storage variable TIME.

Variable-value substitution lets you place two new arguments after DIST to produce results that do not use the storage variables. For example, DIST(4,9) on the current line evaluates the function with 4 substituted for SPEED and 9 substituted for TIME. This lets you quickly check other results without having to change the current values in the storage variables.

You can also substitute other variables. For example, DIST (4,T1) substitutes 4 for SPEED and the variable T1 for TIME. However, if T1 is going to have various values of TIME that you want to use, you may save keystrokes by replacing TIME with T1 in the original function.

The following rules govern the use of variable-value substitution:

Rule 1 **You must deselect [Evaluate Immediately] on the Function Button property sheet to use variable-value substitution with the associated function button.**

If the calculator evaluates the expression immediately, you do not get an opportunity to substitute different arguments.

Rule 2 **If you use new variables as arguments for a programmed function, you must have already defined those variables and their values in the storage variable NAME and VALUE columns.**

In the previous example of DIST(4,T1), you must have a value for T1 available in the storage variables before the calculator evaluates the function.

Rule 3 **The same number of arguments appearing in the original programmed function must be passed to the new function.**

If the original user-programmable function required three arguments, you must provide three arguments within the parentheses. You must distinguish between arguments needed to evaluate the function and other variables in the expression.

For example, if you represent the area of a circle by defining the function, AREA, as:

Pi × SQR(RAD) STORE A1

the calculator can evaluate the expression if it receives a value for the radius, RAD. Pi is already available as a calculator function. You will need to have assigned A1 as a storage variable NAME, but A1 is not an argument used in evaluating the expression.

Therefore, you would only substitute one argument on the current line when you want the calculator to use a radius that is different from the current value in RAD.

Note: If you put an incorrect number of arguments within the parentheses, a message in the desktop header advises you. The incorrect expression moves up into the body of the Log window, and you will have to try again.

Rule 4 **List a substitute argument only once in the argument list even though the argument being replaced may appear several times in the programmed function.**

For example, in the expression TEST4 = $A + B \div (5 \times C) + (10\text{-A}) \times \text{SQR(A)}$, A appears three times. However, the argument list after TEST4 would include only three arguments. The calculator substitutes the first argument in each place where the variable A appeared in the programmed expression.

Rule 5 **The calculator substitutes the arguments in the same order as the arguments appear in the expression.**

The calculator substitutes the variables from left to right, even though the operator priorities may cause the expression to be evaluated in a different order. For example, the first argument you put in the argument list substitutes for the leftmost argument that is needed to evaluate the expression.

Rule 6 **Use parentheses and argument separators with the arguments just as you use them with calculator functions.**

Storage variable cells and menus

The Calculator window includes 20 storage variable cells like those shown in Figure 3-13. You use these cells to store and represent variables (or constants). The storage variable area has two columns:

- The NAME column
- The VALUE column

Assign each variable a symbolic NAME to represent the quantity. You can also assign an initial VALUE to each variable. You can leave the VALUE blank if you plan to use the variable for the result of a calculation instead of as an input.

Use the variable NAMEs in expressions just as you would use the VALUEs they represent. In the equation Distance = Speed × Time, you might assign all three terms as storage variables. Then, you could put Speed × Time on the current line and calculate the Distance based on the VALUEs you assign to Speed and Time in the storage variable cells.

You could also name a function button "DIST" and define it as SPEED × TIME. Then, when you selected the function button, the calculator would calculate the product of Speed and Time.

Note: In this example, the function button name is DIST because a user-programmable function button and a storage variable cannot have the same name.

Storage variables are particularly useful in repetitive calculations where you will evaluate an expression for various values of the variable. They also allow you to write a sequence of expressions where an expression can use the variable NAME to bring in results from a previous expression. For example, your function could increment Speed or Time, and then calculate the Distance covered at different speeds and times.

Figure 3-13   **Storage variable cells and menus**

	NAME	VALUE
▤	SPEED	450
▶	TIME	2.5

Value +
Value -
Store
Recall
Clear

Each storage variable has its own auxiliary menu, located to the left of the NAME column. Each auxiliary menu affects only its associated VALUE cell. The other VALUE storage cells are not affected. The following commands appear when you select one of the menus:

[Value +]

Adds the RESULT register to the VALUE in the storage cell.

[Value-]

Subtracts the RESULT register from the VALUE in the storage cell.

[Store]

Replaces the VALUE in the storage cell with the value in the RESULT register.

[Recall]

Recalls the VALUE in the storage cell, and appends that number to the current line in the log window.

[Clear]

Clears the value appearing in the VALUE column of the storage cell.

Keypad

The Keypad window includes a set of soft keys similar to the keypad on the 6085 Professional Computer System. The calculator keypad lets you select soft keys instead of having to use keyboard keys for many entries. You can use the keypad to do the following:

- Enter operators.
- Enter numbers.
- Enter parentheses.
- Clear the current line in the Log window.
- Advance the caret to a new current line.
- Evaluate the expression on the current line.

The keypad is an independent, separately movable window that appears when you open the Calculator window. Once open, you can close either the Keypad or the Calculator window, and leave the other one open. If the keypad has been closed during a calculator session, you can redisplay it by selecting [Show Keypad] in the calculator menu.

Figure 3-14 shows the two versions of the keypad. When the caret is within the Calculator window, the keypad on the right appears. This version includes parentheses on top of the multiplication and division keys, and an equal sign instead of SKIP above NEXT.

When you move the caret from the Calculator window, the keypad on the left replaces the other keypad. You can use that version as a convenient way to enter characters into other documents.

The keypad's numbers, period, comma, parentheses, < + >, and < - > keys produce the same characters as the corresponding keys on the keyboard.

Figure 3-14 **Two versions of the calculator keypad**
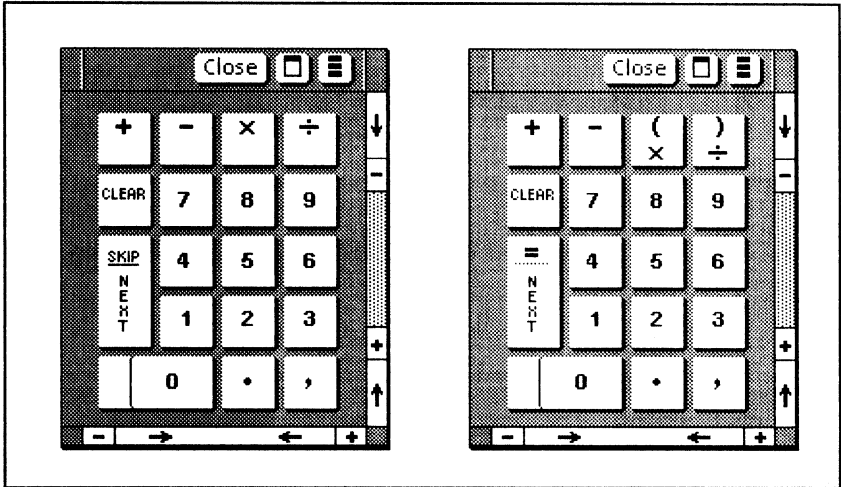
Note: Select the top half of the soft keys to get the parentheses.

This section discusses the remaining soft keys:

- < × > < ÷ >

  Select these soft keys to multiply and divide items in the Log window or in expressions you assign to the user-programmable function buttons. You can divide using either the < ÷ > or the keyboard's </> key. However, you cannot substitute the keyboard's <X> key for the keypad's < × > key. The keyboard's < * > key corresponds to the keypad's < × > key for multiplication.

- <CLEAR>

  Select this soft key to clear the current line of the Log window. <CLEAR> works only when the caret is in the Log window. The key clears the current line even if the caret is in the body of the Log window.

• < = /NEXT >

If the caret is in the Log window, select < = /NEXT > to evaluate the expression on the current line, if there is one. If the current line in the Log window is blank when you select < = /NEXT >, the caret advances to the next line and the clears the RESULT register.

You can also use < = /NEXT > to advance the caret to the next column in the storage variable area or to the next property in a Function Button property sheet.

Procedures for using the calculator

Before you use the calculator regularly, you will want to customize one or more calculator icons.

1. Retrieve a calculator icon from the Office Accessories divider in the Workstation divider of the directory. Make additional copies if you plan to program individual icons to perform specific calculations.

2. Use the Calculator property sheet to:

   • Rename the Calculator icon.

   • Specify whether or not you want to keep a log of your calculations.

   • Specify decimal and argument separators.

3. Use the Calculator Format property sheet to set the initial formats for the numbers and angles in your calculations.

Evaluating expressions

You can think of using the calculator as the following three-step process:

1. Select into the Log window and clear the current line. (In some cases, you might leave the current line if it contains a result that you want to use in the new expression.)

2. Build an expression on the current line.

3. Evaluate the expression.

The second step requires the most thought and effort. This section discusses how you build an expression on the current line by using some, or all, of the following inputs:

- Operators and numbers from the keyboard and/or keypad

- Calculator function buttons

- RESULT and MEMORY registers

- User-programmable function buttons

- Storage variable cells

- Parts of expressions copied from the body of the Log window or from other documents

The procedures in this section assume that you have already done step 1, and that you are ready to build up the expression on the current line.

Entering expressions involving operators and numbers

Expressions may be as simple as a short combination of numbers and operators. You can use the keyboard and keypad to enter these expressions.

Table 3-1 shows examples of correct formats for expressions that involve only numbers and operators. The Calculator expression column shows the functions and arguments as they appear in the current line of the Log window. The Result column shows the value that appears in the RESULT register and on the new current line after you evaluate the function. The results in these examples appear in **Fixed** format with two digits after decimal separator.

Table 3-1   Calculator expressions using
operators and numbers

Operation or function	Example	Calculator expression	Result
Addition	Add 100 and 50	>100+50	>150.00
Subtraction	Subtract 9 from 54	>54-9	>45.00
Multiplication	Multiply 100 and 50	>100×50	>5000.00
Division	Divide 100 by 50	>100÷50	>2.00
Exponentiation	Raise 4 to the 3rd power	>4**3	>64.00
Factorial	Calculate 1×2×3×4	>4!	>24.00

1. Enter the number that precedes the operator.

2. Select < + >, <->, < × >, or < ÷ > on the keypad or press < + >, <->, < * >, </>, <!>, or < * > < * > on the keyboard.

3. Enter additional numbers and operators required to complete the expression.

4. Select < =/NEXT> on the keypad to evaluate the expression.

Figure 3-15 shows a Log window after the calculator has evaluated several expressions.

Using calculator function buttons to enter expressions

All calculator functions, except Pi, require at least one argument. No calculator function uses more than two arguments within the parentheses. If two arguments are enclosed in parentheses, they must be separated by the **Argument Separator** specified on the Calculator property sheet.

Figure 3-15 **Registers and Log window**
containing simple expressions

```
> .503 + (-56.02)                    ↓
> -55.52                             ▬
> -2 + (-3.1) + (-.02)
> -5.12
> (7 ÷ 12) + (8 ÷ 12)
> 1.25
> (9 × 5)/(3 × 2)
> 7.50                               ✚
> 300/7.8-2.3
> 36.16                              ↑
```

RESULT   MEMORY

| 36.16 |
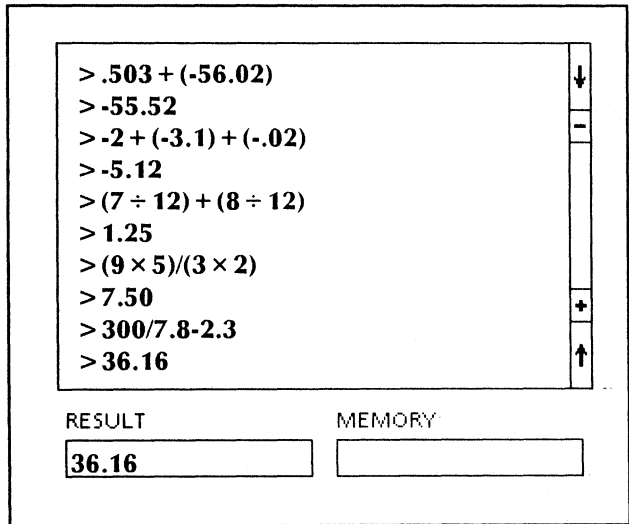
The basic formats for using calculator functions
are as follows:

• Keyword(argument) as in SQR(3)

• Keyword(argument,argument) as in
    ROOT(3,27)

• Argument keyword as in 5%

Table 3-2 shows examples of expressions that
include functions you can enter using the
calculator function buttons. The Calculator
expression column shows the functions and
arguments as they appear in the current line of
the Log window. The Result column shows the
value that appears in the RESULT register and on
the new current line after you evaluate the
function.

The **Geometry** is [Degrees], and the **Format** is
[Fixed] with **Digits After Decimal Separator**
property set at [2].

Table 3-2   **Calculator expressions using calculator function buttons**

Function	Example	Calculator expression	Result
Absolute value	Take the absolute value of -50	>ABS(-50)	50.00
Arc cosine	Calculate arc cosine of .5	>ACOS(.5)	60.00
Arc sine	Calculate arc sine of 1	>ASIN(1)	90.00
Arc tangent	Calculate arc tangent of 1	>ATAN(1)	45.00
Cosine	Calculate cosine of 90	>COS(90)	.00
Exponentia-tion	Raise "e" to 3rd power	>EXP(3)	20.09
Logarithm (base 10)	Calculate the common log of 10	>LOG(10)	1.00
Natural logarithm	Calculate the natural (Naperian) log of 10	>LN(10)	2.30
Percent	Take 50% of 200	>50% × 200	100.00
Power	Raise 10 to 3rd power	>PWR(10,3)	1000.00
Pi	Calculate the area of a circle for radius = 5	>Pi × SQR(RADIUS)	78.54
Root	Take 3rd root of 27	>ROOT(3,27)	3.00
Sine	Calculate sine of 60	>SIN(60)	.87
Square	Square 3	>SQR(3)	9.00
Square root	Take square root of 50	>SQRT(50)	7.07
Tangent	Calculate tangent of 30	>TAN(30)	.58

Using function buttons requiring arguments after the keyword

1. If an arithmetic expression is to precede the function, type in the expression.

   This expression should end with an operator, such as + or ÷, that will precede the function.

2. Select the desired function button.

3. Use the keyboard or keypad to enter the argument(s).

4. Enter the right parenthesis to enclose the argument(s).

5. If additional terms follow the function, enter those terms.

6. Select < =/NEXT> on the keypad to evaluate the function (or the function and the expression) and obtain a result.

Using the <%> function button

The percent sign comes directly after its argument and is normally multiplied by some other value as in 5% × 200.

1. If an arithmetic expression is to precede the function, type in the expression.

   This expression should end with an operator, such as + or ÷, that will precede the argument with the percent sign.

2. Enter the argument to be used with %.

3. Select the <%> function button.

   The percent sign appears right after the argument on the current line of the log window.

Note: The Log window also recognizes the percent sign produced by the <%> key on the keyboard.

4. If additional terms follow the function, enter those terms.

5. Select < =/NEXT> on the keypad to evaluate the function (or the function and the expression) and obtain a result.

Using the <PI> function button

Enter the function Pi just as you would use any other constant in an expression.

1. If an arithmetic expression is to precede Pi, type in the expression.

   This expression should end with an operator, such as + or ÷, that will precede Pi.

2. Select the <PI> function button.

   Note: The Log window also recognizes the letters Pi typed from the keyboard.

3. If additional terms follow Pi, enter those terms.

4. Select < =/NEXT> on the keypad to evaluate the function (or the function and the expression) and obtain a result.

Figure 3-16 shows examples of a Log window that includes expressions that were entered using calculator function buttons.

Entering MEMORY and RESULT onto the current line

You can easily include the values in the MEMORY and RESULT registers back into an expression on the current line. In fact, the value in the RESULT register is already on the current line.

Figure 3-16   **Examples of expressions using
calculator function buttons**

> Pi × SQR(15)
> 706.86
> 5 + LOG(40)
> 6.60
> 2.3 + ROOT(5,100)
> 4.81
> 8 × 10%
> .80
> 10 ÷ SIN(45)
> 14.14

RESULT   MEMORY

| 14.14 |
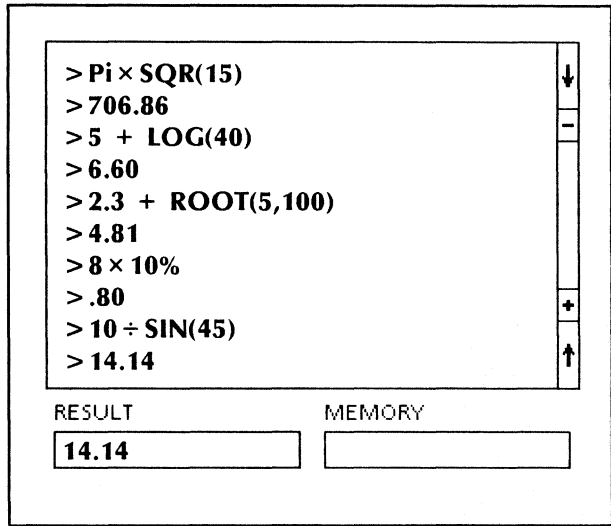
If you need to start with the result of the
previous expression, do not clear the current line.
However, in some expressions, you will need the
result as a later part of the expression. The
following procedure shows you how to bring the
RESULT or the MEMORY values back to the
current line.

1. If an arithmetic expression is to precede the
    value from the MEMORY or RESULT register,
    type in the expression.

    This expression should end with an operator,
    such as + or ÷, that will precede the value
    brought in from the MEMORY or RESULT
    register.

2. To recall the value from the MEMORY
    register, select < MR > in the calculator
    window.

The value appears on the current line. You can also type in the word "memory" on the current line. In that case, the value never appears on the current line, but is used when you evaluate the expression.

3. To recall the value from the RESULT register, type **result** on the current line.

The value never appears on the current line, but is used when you evaluate the expression.

Note: If you had no other requirement for the MEMORY register, you could select <MS> after evaluating the previous expression. Then, you could recall the result from the MEMORY register with the <MR> key instead of having to type the word "result."

4. Enter additional terms, if necessary.

5. Select < =/NEXT> on the keypad to evaluate the expression.

Using the programmable function buttons

Before you can use a user-programmable function on the current line, you must program an expression into the Function Button property sheet. That expression may be identical to one you would put on the current line.

An earlier example suggested programming SPEED × TIME into a function button you called DIST. Selecting Dist places the term DIST on the current line, which is equivalent to typing SPEED × TIME on the current line. In both cases, of course, you need to have VALUEs for SPEED and TIME in the storage variables. Refer to a succeeding section titled "Using the storage variable cells" for additional information.

There is one significant difference between expressions that you program and those that you enter directly onto the current line. When you work on the current line, you can use the mouse to enter terms directly from sources such as the calculator function buttons, the MEMORY register, and the storage variables.

When you program an expression, you must include terms that correspond to the selections done with the mouse button. If you want MEMORY, for example, you would use the Memory command instead of the <MR> key.

If you want to use the Store, Memory, and Result commands, refer to the earlier section titled "Using the Store, Memory, and Result commands."

Figure 3-17 shows an example of programming a function button in the Calculator window.

Figure 3-17 **Programming a function button in the Calculator window**
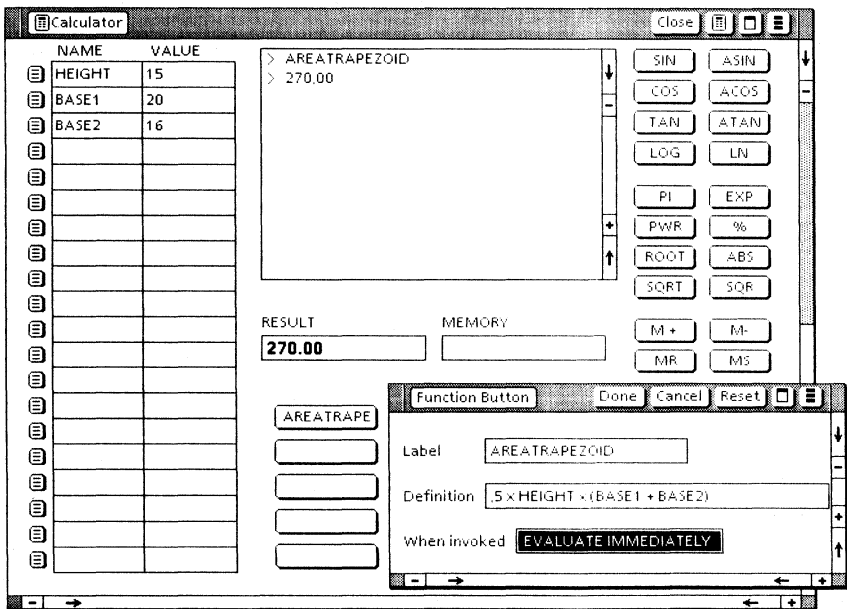
Programming a function button

1. Select [Disable Buttons] in the calculator menu.

2. Select a programmable button to display its Function Button property sheet.

3. Type a name for the function button in the **Label** property.

4. Type into **Definition** the expression that you are programming into the button.

    The same rules of syntax that apply to expressions entered in the Log window apply to expressions you enter into **Definition**.

5. Highlight [Evaluate Immediately] if you want the calculator to evaluate the expression as soon as you put it on the current line.

6. Select [Done].

7. If you want to program additional function buttons, repeat steps 2 through 6.

8. Select [Enable Buttons] in the calculator menu.

Evaluating an expression programmed into a function button

1. If an arithmetic expression is to precede the expression in the function button, type in the expression.

    This expression should end with an operator, such as + or ÷, that will precede the expression from the function button.

2. Select the function button.

    The function's label appears on the current line. If you selected [Evaluate Immediately], the calculator evaluates the entire expression

on the current line, and the procedure is complete.

Note: You can type the function button's label directly into the Log window instead of just selecting the function button. If you do, you must select < = /NEXT> or press < SKIP/NEXT > to evaluate the expression. In addition, you must type the entire label and not just the part that shows on the function button.

3. If [Evaluate Immediately] is not selected, you can enter additional terms.

4. Select < = /NEXT >.

Using the storage variable cells

The storage variables are like having 20 additional MEMORY registers to store frequently used variables and values. This section includes procedures for the following:

• Assigning NAMEs to storage variables
• Assigning initial VALUEs to storage variables
• Entering VALUEs from storage variables

Figure 3-18 shows an example of a Calculator window with storage variables defined.

1. Select into any cell in the NAME column.

2. Type the NAME you want to use to represent that variable in your calculations.

3. Select < = /NEXT> on the keypad.

4. Type in the numerical VALUE if you want to assign an initial value of the variable.

Figure 3-18 **Example of a Calculator window with storage variables defined**
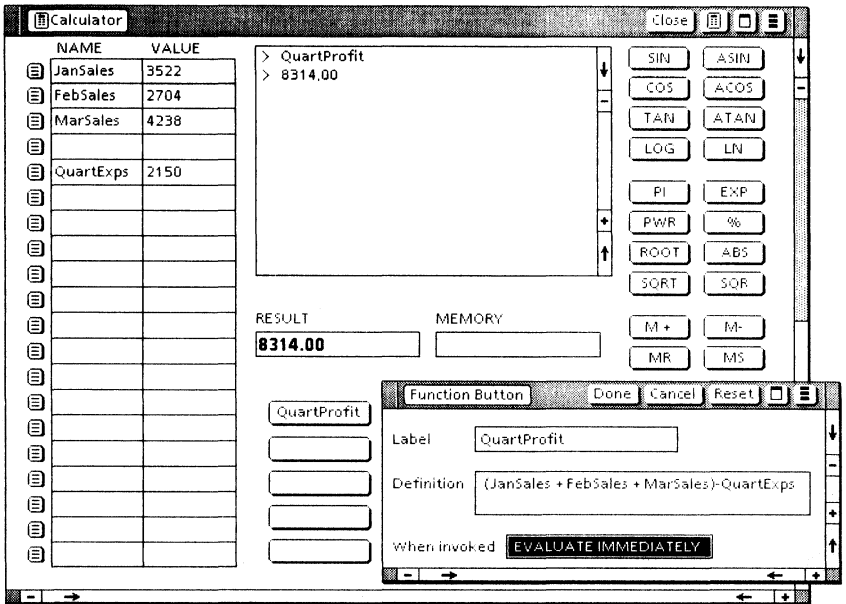
You can skip this step if you will use an expression to calculate the VALUE. However, the variable must have a VALUE before you can use its NAME as an input to an expression.

5. Select < =/NEXT>, and repeat steps 2 through 4 if you want to name additional variables.

Entering VALUEs from storage variables
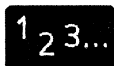
You can easily recall a variable to the current line using the following procedure:

1. If an arithmetic expression is to precede the value from the storage variable, type in the expression.

   This expression should end with an operator, such as + or ÷, that will precede the storage variable's value.

2. Select [Recall] from the storage variable auxiliary menu for the variable you want to recall.

3. Enter additional terms, if necessary.

4. Select < = /NEXT >.

Other basic calculator actions

1 2 3...

In addition to knowing how to enter information on the current line, there are other actions you will perform with your calculator. This section covers the following actions:

• Printing the calculator log
• Clearing calculator information

Printing the calculator log

1. Close the calculator window.

2. Copy the Calculator icon to a printer icon just as you would print any other document. The result is a copy of the log.

Clearing calculator information

There are different methods of clearing various parts of the calculator. This section is a summary of actions that will clear the following:

- The Log window
- The RESULT register
- The MEMORY register
- A storage variable's VALUE
- All VALUEs in the storage variables

Clearing the Log window

1. Select [Clear Log Window] in the calculator auxiliary menu.

   Note: Be sure you have copied to another document any previous calculations you want to save.

2. Select [Yes] in the confirmation message in the desktop message area.

Clearing the RESULT register

1. Select in the Log window.

2. Select < =/NEXT> or press < SKIP/NEXT> on the keyboard.

   This appends a blank current line to the body of the Log window and clears the RESULT register.

   Note: If a correctly formatted expression is on the current line, selecting < =/NEXT> evaluates that expression and puts the result in the RESULT register. In that case, select < =/NEXT> once more to append a blank current line and clear the RESULT register.

Clearing the MEMORY register

1. Clear the RESULT register using the preceding procedure.

2. Select <MS> to store the blank result into the MEMORY register.

Clearing a storage variable's VALUE

Select [Clear] in the storage variable auxiliary menu for the NAME whose VALUE you want to clear.

Clearing all VALUEs in the storage variables

1. Select [Clear Variable Values] in the calculator menu.

   Note: This command does not clear the variable NAMEs. You can use normal editing on a NAME to change or delete a storage variable's NAME.

2. Select [Yes] to confirm your decision in the desktop message area.

4. Personal Calendar

The *VP Office Accessories* Personal Calendar application is a helpful time management tool. Calendar lets you quickly refer to a calendar for any year from 1978 through 2035. You can easily add events to the calendar to keep track of all your appointments or other items of interest.

Key concepts of the Personal Calendar

The calendar lets you enter scheduling information you would normally keep track of manually. Once you enter events, you can display them with other events for the same day or month. The calendar even offers a year view with asterisks marking any dates on which you have events scheduled.

Recurring events, such as weekly staff meetings, are as easy to put into your calendar as a single event. You can have the calendar send event reminders to your workstation and/or to other participants in the event through the electronic mail service.

The calendar prints daily or monthly views of your schedule. The daily view shows the "what, where, when, and how long" of the events for the day. The monthly view lists the times, and as much of the title as will fit, for up to seven meetings for each day of the month.

Calendar icon

When the Personal Calendar is running in the application loader, a Calendar icon (Figure 4-1) appears in the Office Accessories divider of the

desktop directory. You can keep several Calendar icons on your desktop. When you open a Calendar icon, you can display four different views of the Calendar window that will help you keep a record of appointments or "events."

Figure 4-1 **Calendar icon**

Views of the Calendar window

- Month view
  The calendar opens to the current month and shows up to four events scheduled for each day of the month.

- Day view
  Select a day on the month view, and the day view appears. The day view lists hourly time slots and shows any events you have scheduled.

- Event view
  Select a time slot on the day view, and the event view appears. This view shows details on the existing event or lets you input details for a new event you want to add.

- Year view
  When you display the month view, a header command lets you show the year. The year view displays all 12 months of the year. This view does not show any events. However, the year view is handy when you need to see a calendar for another month.

You can print copies of the month view and the day view. Up to seven events per day appear on the printout, when you print the month view on an 11 by 8½-inch piece of paper.

The four views of the calendar are discussed in detail in the section titled "Windows, property sheets, and option sheets."

Event reminders

Calendar can automatically generate reminders prior to any upcoming event. When you input the information about the event, you can also specify whether any reminders are to be sent. Calendar can send a mail note through the electronic mail service, display a reminder window on your desktop, or both.

When you choose to have reminders for an event, you can specify:

- The type of reminder
- When to send the reminder
- Who should receive a mail reminder

The name you use on the Logon option sheet's **Name** option is listed automatically for all reminders you specify. You can specify other names, or even distribution lists, to send reminders to other workstations connected to the electronic mail service.

Window reminders

If you select a window reminder for an event, a window appears on your desktop before the event. The reminder appears at the specified number of minutes, hours, or days before the event's scheduled time.

Each calendar on the desktop has its own Reminder window. If you are monitoring calendars for more than one person, reminders for each calendar appear in a separate window. Once the reminder is displayed for a particular

calendar, other reminders for the same calendar are listed in the same window.

Mail reminders

Mail reminders are sent in the form of mail notes. Calendar maintains a default mailing list for mail reminders. You can send mail notes automatically to names on that list. You can also modify the list for each event to make up a specific list of recipients for reminders on that particular event.

Repeating events

Repeating events are appointments or events that occur periodically. The following examples are among the repeating events Calendar supports:

* Weekly on a specific day
* Monthly on a specific date
* Yearly on a specific date
* Last weekday of the month or year

A repeating event appears on the calendar on that day you schedule it and on all corresponding days that follow through December 31, 2035. You can delete any future instances of repeating events that you do not want to appear.

Windows, property sheets, and option sheets

Most of your actions with Calendar involve the four view windows and the Reminder window. Calendar has some other special properties and options on the Calendar properties sheet and on the Calendar version of the Printing option sheet.

Calendar properties sheet

Display the Calendar properties sheet by selecting the Calendar icon and pressing < PROP'S >. Use the Calendar properties sheet (Figure 4-2) to:

- Name the Calendar icon.
- Set the time format.
- Specify the recipients of mail reminders.

Figure 4-2   **Calendar properties sheet**
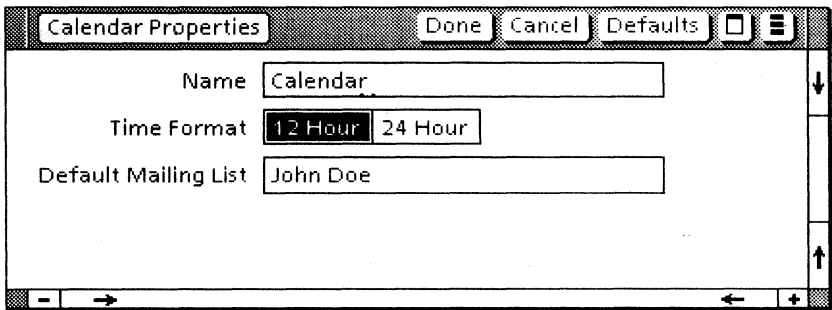
Window commands

[Done]
Closes the property sheet and applies the specified properties to the calendar.

[Cancel]
Closes the property sheet without applying any changes.

[Defaults]
Sets the calendar **Name** to its default name (Calendar), the **Time Format** to [12 Hour], and the **Default Mailing List** to your logon name.

Properties

Name
Specifies the name of the Calendar icon. The name appears centered at the top of the page of the printed day view. In the printed month view, the name appears to the left of the month/year title.

Note: Enter only a space if you do not want the calendar's name to appear on printouts of the month or day view.

Time Format
Specifies the time format the calendar uses to display its dates and validate the start time of appointments. The choices are [12 Hour] and [24 Hour] (the latter is sometimes referred to as military time).

For example, one o'clock in the afternoon displays as 1:00 PM in the event view when you select [12 Hour] as the **Time Format**. It displays as 13:00 when you select [24 Hour].

Note: When you select [24 Hour] format, AM and PM do not display. If you attempt to use them when setting an event time, an error message, "Bad start time," displays.

Default Mailing List
Specifies a mailing list for all mail reminders sent by the calendar. The default name is the **Name** you use on the Logon option sheet. You may add other names when you want other recipients to receive copies of all mail reminders generated by the calendar.

Note: The names on the **Default Mailing List** appear automatically in the **Recipients** option on the event view. This gives another opportunity to add or delete names that will receive reminders for specific events.

Month View window

Figure 4-3 shows an example of the Month View window. When you open the Calendar icon, the current month displays. The header for the current day is shaded.

The month view lists up to four events for each day. The time of each event and as much of the event's title (or place) as possible appear in the corresponding day's area.

A day auxiliary menu appears in the header of each day that lists events. Select into the menu to display a listing of the times and complete titles (or places) of all events for that day. You can also use the menu to select the event view for any of the day's events.

If the day's schedule includes more than four events, the auxiliary menu includes a plus sign (+) to advise you that the day's listing only shows the first four events. Figure 4-4 shows the two versions of the day auxiliary menu.

Up to seven appointments can be listed per day on an 11 by 8½-inch printout of the calendar month view. The starting times for appointments are printed using the time format specified on the Calendar properties sheet.

[Close]
Closes the calendar.

[Show Next]
Displays the month following the month currently displayed.

Figure 4-3 **Month view of the calendar**

Sunday	Monday	Tuesday	July 1989 Wednesday	Thursday	Friday	Saturday
						1
2	3 ▣ 1:00 Program Te	4 ▣ 7:00 HOLIDAY	5 ▣ 8:00 Travel to Si 9:00 Site Visit 12:00 Working Lu 1:00 Program M	6 ▣ 10:00 Sr. Staff Me	7	8
9	10 ▣ 1:00 Program Te	11	12	13 ▣ 10:00 Sr. Staff Me	14	15
16	17 ▣ 1:00 Program Te	18	19	20 ▣ 10:00 Sr. Staff Me	21	22
23	24 ▣ 1:00 Program Te	25	26	27 ▣ 10:00 Sr. Staff Me	28	29
30	31 ▣ 1:00 Program Te					

Figure 4-4 **The two forms of the day auxiliary menu**
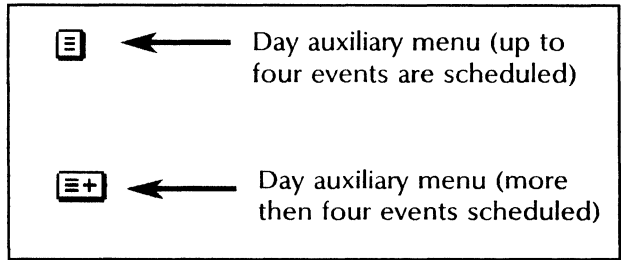
[Show Previous]
Displays the month preceding the month currently displayed.

[Show Year]
Displays the year view.

Day View window

The day view displays when you select a day in the month view and press <OPEN> or click the left mouse button twice. When the day view (Figure 4-5) displays, four headings appear: Place, Time, Duration, and Title.

A list of hourly time slots from 7:00 to 17:00 (in the 24-hour format) displays under the "Time" heading. The other columns will show information on any events you have already entered for the day.

Note: You can specify other time slots (for example 7:15 or 6:30) by changing the **Time** option on the event view, which is discussed in the section titled "Event View window."

[Close]
Closes the calendar. Use one of the other commands if you want to see other views.

Figure 4-5 **Day View window**

```
▓░Calendar ⟨Close⟩⟨Show Next⟩⟨ Show Previous ⟩⟨ Show Month ⟩⟨□⟩⟨☰⟩▓
┌──────────────────────────────────────────────────────────────┬─┐
│            Wednesday July 5, 1989                            │↓│
├──────────────────────────────────────────────────────────────┼─┤
│  Place    Time      Duration     Title                       │─│
│           7:00                                                │ │
│           8:00      45 m         Travel to Site              │ │
│           9:00      3 h          Site Visit                  │ │
│          10:00                                                │ │
│          11:00                                                │ │
│          12:00      1 h          Working Lunch               │ │
│          13:00      2 h          Program Management Review   │ │
│          14:00                                                │ │
│          15:00      45 m         Return from Site           │+│
│          16:00                                                │ │
│          17:00                                                │↑│
├──────────────────────────────────────────────────────────────┴─┤
│ ⟨─⟩⟨ → ⟩                                              ⟨+⟩       │
└──────────────────────────────────────────────────────────────────┘
```

[Show Next]
Displays the day following the day currently displayed.

[Show Previous]
Displays the day preceding the day currently displayed.

[Show Month]
Displays the month view of the month that includes the day displayed.

Event View window

You use the Event View window (Figure 4-6) to enter or to change an event.

You can display the event view by selecting a time slot in the day view and pressing <OPEN>. If the time slot is empty, the calendar displays an empty event view.

Figure 4-6   **Event View window**

If there is already an event in the time slot, you can use the day auxiliary menu to display the event view. Select the event from the menu as you would select any item in an auxiliary menu.

You can add new information to options in the event view, or you can replace existing options. As a minimum, you must list information in the **Place**, **Title**, or **Details** option for Calendar to place the event on the day's schedule. You also use the event view to specify when you want reminders sent for a selected event.

The event is placed in the calendar when you close the event view or select another view of the calendar.

Window commands

[Close]
Closes the calendar. Use one of the other commands if you want to see other views.

[Show Next]
Displays the next event on the calendar, if one exists.

[Show Previous]
Displays the previous event on the calendar, if one exists.

[Show Day]
Displays the day view for the day that includes the event.

Options

Repeat
Lets you place the event on the current day's calendar and on recurring days in the months or years that follow. Select into the auxiliary menu to reveal these choices:

[None]
The event appears only on the date indicated in the **Time** option.

[Weekly]
The event also appears on the same day of each week that follows.

[Monthly]
The event also appears on the same date of each month that follows.

[Last Day (Monthly)]
The event also appears on the last day of each month that follows.

[Nth Weekday (Monthly)]
The event also appears on the corresponding weekday of each month that follows. For example, if you are scheduling the event on the third Wednesday of the month, the event will repeat on the third Wednesday of each month that follows.

[Last Weekday (Monthly)]
> The event also appears on the last weekday of each month that follows.

[Yearly]
> The event also appears on the same date of each year that follows.

[Nth Weekday (Yearly)]
> The event also appears on the corresponding weekday of the corresponding month in each year that follows. For example, if you are scheduling the event on the third Wednesday of March, the event will repeat on the third Wednesday of March in each year that follows.

> **Note:** If you schedule an event on the 5th Friday of May, for example, the event repeats only in years that have five Fridays in May.

[Last Weekday (Yearly)]
> The event also appears on the last weekday of each year that follows.

A repeating event created on a specific day repeats on each corresponding day from that date to the last calendar day supported (December 31, 2035). The default is [None].

If you specify a repeating type of "last day" for an event that does not fall on the last day of the month, a regular event appears on the date you specify in the **Time** option. The repeating events will appear on "last day."

Time
> Lets you specify the starting time and date of the event. The default is the date and time slot you used in opening the event view. However, you can put any date and any time in this option. <u>This option lets you specify start times that differ from the default time slots on the day view.</u>

Note: The time you specify must be a valid entry according to the **Time Format** you specified on the Calendar properties sheet.

When you leave the event view, the event is placed in the new time slot. This option provides an easy way to move the information you previously entered on events that are rescheduled.

Place

Lets you specify the location of the event. If you leave the **Title** option blank, information in **Place** displays on the month view.

Title

Lets you specify a title for the event. This information displays on the month and in the day auxiliary menu for the specified day.

Duration

Lets you specify how long the event will last. The default is 30 minutes. You can set the length of the event in minutes, hours, or days.

Details

Lets you specify a description of the event. If **Place** and **Title** are empty, information in **Details** appears on the month and in the day auxiliary menu for the specified day.

Reminder By

Lets you specify that a reminder will be sent prior to the event. The default is [None]. If you select another choice, **Remind At** appears below **Reminder By**. If the choice includes a mail reminder, the **Recipients** option also appears.

The following choices are available:

[Mail]
Specifies that an electronic mail reminder will be sent to the people specified in the **Recipients** option list.

[Window]
>Specifies that a Reminder window will appear on your desktop prior to the event.

[Both]
>Specifies that Calendar will send electronic mail reminders and a Reminder window prior to the event.

[None]
>Specifies that no reminders will be sent prior to the event.

Remind At
>Specifies the amount of time prior to the event that the reminder will be sent. This option appears only if [Mail], [Window], or [Both] is selected in **Reminder By**.

Recipients
>Specifies the recipients of the mail reminder. When the **Recipients** option appears, it includes the names listed in the **Default Mailing List** on the Calendar properties sheet. You can delete those names or add others that should receive a mail reminder of this particular event.

>**Note:** If you do not type the fully qualified names of recipients (name, domain, and organization), Calendar uses your domain and organization name as the default.

>This option appears only if [Mail] or [Both] is selected in **Reminder By**. It accepts a list of names or distribution lists, separated by commas.

Year View window

The year view (Figure 4-7) displays when you select [Show Year] in the month view. The name in the current month is shaded.

Figure 4-7 Year View of the calendar

Calendar   Close | Show Next | Show Previous

1989

January	February	March
1 2 3 4* 5 6 7	1 2 3 4	1 2 3 4
8 9 10 11*12 13 14	5 6 7 8 9 10 11	5 6 7* 8 9 10 11
15 16 17 18*19 20 21	12 13 14 15 16 17 18	12 13 14 15 16 17 18
22 23 24 25*26 27 28	19 20 21 22 23 24 25	19 20 21 22 23 24 25
29 30 31	26 27 28	26 27 28 29 30 31

April	May	June
1	1 2 3 4 5 6	1 2 3
2 3 4 5 6 7 8	7 8 9 10 11 12 13	4 5 6 7 8 9 10
9 10 11 12 13 14 15	14 15 16 17 18 19 20	11 12 13 14 15 16 17
16 17 18 19 20 21 22	21 22 23 24 25 26 27	18 19 20 21 22 23 24
23 24 25 26 27 28 29	28 29 30 31	25 26 27 28 29 30
30		

July	August	September
1	1 2 3 4 5*	1 2
2 3* 4* 5* 6* 7 8	6 7 8 9 10 11 12	3 4 5 6 7 8 9
9 10*11 12 13*14 15	13 14 15 16 17 18 19	10 11 12 13 14 15 16
16 17*18 19 20*21 22	20 21 22 23 24 25 26	17 18 19 20 21 22 23
23 24*25 26 27*28 29	27 28 29 30 31	24 25 26 27 28 29 30
30 31*		

October	November	December
1 2 3 4 5 6 7	1 2 3 4	1 2
8 9 10 11 12 13 14	5 6 7 8 9 10 11	3 4 5 6 7 8 9
15 16 17 18 19 20 21	12 13 14 15 16 17 18	10 11 12 13 14 15 16
22 23 24 25 26 27 28	19 20 21 22 23 24 25	17 18 19 20 21 22 23
29 30 31	26 27 28 29 30	24 25 26 27 28 29 30
		31

An asterisk displays after each date of the year with at least one event scheduled.

[Close]
  Closes the calendar.

[Show Next]
  Displays the year following the year currently displayed.

[Show Previous]
  Displays the year preceding the year currently displayed.

Reminder window

The Reminder window, like the example in Figure 4-8, is used to notify users of upcoming events or appointments. A Reminder window opens automatically on the desktop at the time you specify on an event view.

Figure 4-8   **Reminder window**

Reminder: Calendar   Close □ ▤

Mar 16   2:00 PM   Staff Meeting   ↓

                                                         ↑

    —   →   ←   +
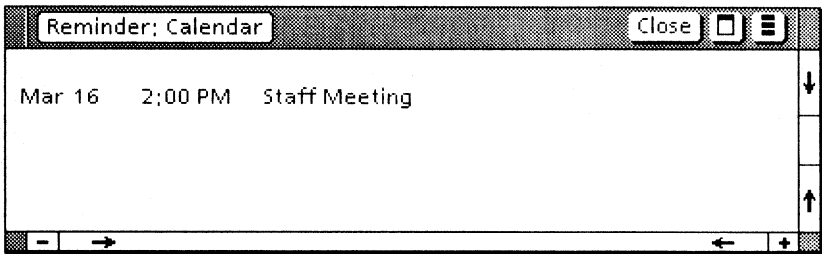
Note: When the reminder is posted, it displays for the duration of the appointment. When the appointment is over, the reminder message is removed from the window.

[Close]
  Closes the Reminder window until time for the next event reminder.

Printing option sheet (Calendar version)

Use Calendar's version of the Printing option sheet (Figure 4-9) to specify the number of copies of the calendar to be printed, the view to print, and the date to print. The commands and most options are the same ones that display when you send a text document to a printer. The following are the options that appear only when you print a view of a calendar.

Note: The Printing option sheet displays only when you have selected [Display Options] on the Printer option sheet.

Figure 4-9   **Printing option sheet (Calendar version)**

View to Print
Specifies whether the [Day] or [Month] view is to be printed. The default is the last day or month view you displayed before closing the Calendar icon.

Date to Print From
Specifies the beginning date of the range to be printed.

Date to Print To
Specifies the ending date of the range to be printed. If you are printing the month view, a page will print for each month that appears in the range of dates you specify.

Procedures for using the Personal Calendar

1 2 3...

Before you use Calendar regularly, you will want to customize one or more calendar icons.

1. Retrieve a Calendar icon from the Office Accessories divider in the Workstation divider of the directory. Make additional copies if you plan to keep calendars for more than one individual or organization.

2. Use the Calendar properties sheet to:

    • Rename the Calendar icon.

    • Specify whether you want all times displayed in 12-hour or 24-hour format.

    • Modify the **Default Mailing List** option to include any other names that should always receive a reminder whenever you have Calendar send mail reminders for an event.

Displaying the Calendar window

The Calendar window always opens to the month view for the current month. You can display the specific view you want to see by using a combination of header commands and selections within the different views of the calendar window.

Note: Calendar makes a backup file for each open calendar. This file occupies as many disk pages as the actual calendar file. If there is not enough space for the calendar to create a backup file, you cannot open the calendar.

Displaying the month view

1. Open the Calendar icon as you would open any other icon.

If you wanted the current month view, step 1 completes the procedure. If you want a month that is just one or two months before the current month, go to step 2. If the month you want to view is several months away, skip to step 3 for quicker results.

2. Select [Show Previous] or [Show Next] until you display the month you want.

3. Select [Show Year] to display the current year.

4. Select the month you want, if it is in the current year, and press <OPEN> to complete the procedure.

5. If the month you want is not in the current year, select [Show Next] or [Show Previous] until the month is visible in the year view.

6. Select the month you want and press <OPEN> to complete the procedure.

Displaying the day view

1. Display the month view that includes the day you want to show. Use the procedure in the preceding section.

2. Select the day you want and press <OPEN>.

Displaying the event view for an existing event

1. Display the month view that includes the event you want to show.

2. Put the pointer on the day auxiliary menu for the day of the event and hold down the left mouse button.

3. Move the pointer down through the menu display until you highlight the event, and release the mouse button.

Displaying the event view for an empty time slot

1. Display the month view that includes the day you want to show.

2. Display the day view for the day of the event you want to add.

3. Select the time slot you are interested in and press < OPEN >.

Scheduling an event

You can schedule an event from any event view. Normally, however, you would select the time block that includes the start time of the event. Then, you will not have to change the default date and time that Calendar places in the **Time** option of the Event View window.

1. Display the event view for the start time of the event.

2. Specify the options you want Calendar to use in tracking and displaying the event. Refer to the section titled "Event View window" if you need additional guidance on what the options represent.

   Note: As a minimum, you must place information in either the **Place**, **Title**, or **Details** options before Calendar will accept the event.

3. Select a different view to have Calendar record the options you just specified.

   It may take a while to move the Calendar icon on the desktop because each time it is moved, internal data structures must be deleted and recreated.

   Note: Events stay in the calendar until they are deleted.

Scheduling a repeating event

1. When scheduling an event, replace [None] in the **Repeat** option with the appropriate selection in the auxiliary menu.

2. Change to another view to enter the event on the selected day and all corresponding days that follow.

   Note: If you know when the final event of the series is scheduled, you should use the following procedure to delete meetings from the calendar on days that follow the completion of the series. That keeps Calendar from storing unnecessary events and clears unnecessary information from the time slots.

Deleting a repeating event

When you delete a repeating event, the event on that day, and all listings of the event on future days, disappear from the calendar. Whenever you discover that your day view includes a repeating event that is no longer valid, simply delete the event using the following procedure.

1. Display the day view for the first day that you want to remove the repeating event from.

2. Highlight the event.

3. Press < DELETE > .

Changing an event

1. Display the Event View window for the event you want to change.

2. Make the necessary changes to the options that display in the Event View window.

3. Select a different view to record the changes you just made to the options in the Event View window.

Deleting an event

1. Display the day view that includes the event you want to delete.

2. Select the event and press < DELETE >.

Moving or copying an event

You can copy or move an event from one time slot to another on the <u>same day</u>. The new event will have the same properties as the original event except for the starting time. The reminder type will be copied as long as the event is in progress or in the future.

1. Display the day view that includes the event you want to copy or move.

2. Select the event and press < COPY > or < MOVE >.

3. Select the new time slot and click the left mouse button.

Specifying recipients for reminders by mail

If you do not specify a list of mail recipients in the event view, mail reminders are sent to the recipient name(s) typed in the **Default Mailing List** on the Calendar properties sheet.

1. Display the Calendar properties sheet.

2. Edit the **Default Mailing List** option.

Separate names or distribution lists with commas. Your domain and organization are the default values for all entries unless you specify otherwise.

3. Select [Done].

Printing a day or month view

1. Copy the Calendar icon to a printer icon.

    Note: If [Display Options] is not highlighted on the Printer properties sheet for the printer you select, step 1 completes this procedure. In that case, the printer prints the last month or day view displayed before you closed the Calendar icon.

2. Select [Day] or [Month] as the view you want to print.

3. Change the **Date to Print From** and **Date to Print To** options if your requirement is different than the dates displayed.

4. Change any other options, as required.

    Note: The **Paper Size** option on the Printing option sheet lets you specify the size of the paper the calendar is printed on. However, if you specified a different paper size in the workstation profile, the printout's sizing is based on the paper size specified in the workstation profile.

5. Select [Start].

Mailing a Calendar icon

You can mail the entire calendar just as you would mail any other document. If you want to mail a single month view, however, you must first create a print format document of the month view you wish to mail.

To mail a single month view:

1. Copy the Calendar icon to a printer icon.

2. Select the **Print Format Document Only** box. (The box with a tiny Print Format

Document icon next to the **Number of Copies** option.)

3. Select [Month] as the **View to print**.

4. Change the **Date to Print From** and **Date to Print To** options to a single month if it does not already indicate the month you want to mail.

5. Select [Start].

6. When the Print Format Document icon appears on your desktop, move or copy it to your outbasket.

5. Keyboard Accelerators

The Keyboard Accelerators application provides you with several tools for increasing your work productivity. With Keyboard Accelerators, you can create your own keyboards as well as specify the number, availability, and use of alternate keyboards on your desktop.

Key concepts of Keyboard Accelerators

You can use the Keyboard Accelerators application to:

- Create your own keyboards using characters from other alternate keyboards. Any character supported by your software can be used, including foreign language, scientific, mathematical, or symbol-specific characters.

- Set a second language keyboard, and quickly toggle between the system default keyboard and the second language keyboard with one keystroke.

- Restrict the number of alternate keyboards that appear in the Alternate Keyboard Selection window, regardless of the number of alternate keyboards loaded on the workstation.

- Specify the order in which alternate keyboards are presented in the Alternate Keyboard Selection window.

User keyboard

When the Keyboard Accelerators application is loaded and running in the application loader, the User Keyboard icon appears in the Basic Icons divider (Figure 5-1).

Figure 5-1   **User Keyboard icon in the Basic Icons divider**
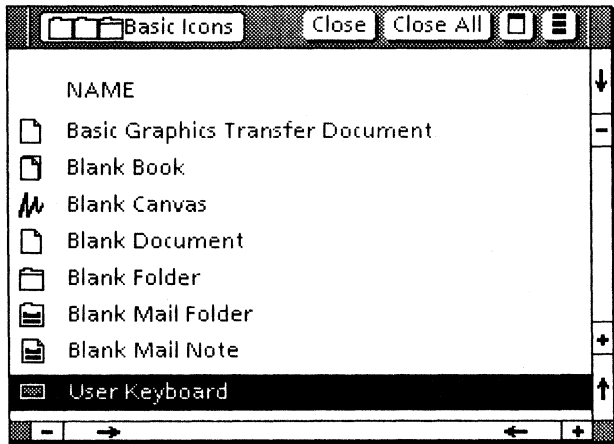
You use the User Keyboard icon (Figure 5-2) to create your own user keyboard. When you select and open the User Keyboard icon, the User Keyboard window displays.

Figure 5-2   **User Keyboard icon**

The User Keyboard window (Figure 5-3) contains an editable QWERTY keyboard, as well as several options to assist you in editing the characters on the key caps.

Figure 5-3   **User Keyboard window with the editable QWERTY keyboard**
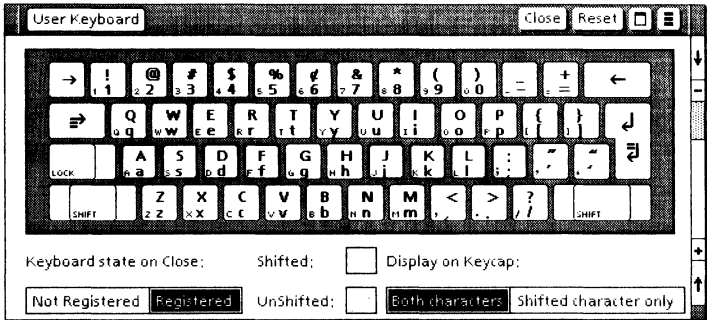
To create your own keyboard, you edit the characters appearing on the editable QWERTY keyboard. You can use three methods to modify the characters on the key caps:

• Delete characters on the key caps.

• Rearrange characters on the key caps by copying or moving them from one key cap to another.

• Assign new characters to the key caps using the standard keyboard or an alternate keyboard.

The number of user keyboards you can create is limited only by the available disk space on your workstation (approximately 20 disk pages per user keyboard).

To use a user keyboard, you must place the keyboard on your desktop and register it in the User Keyboard window.

You can store multiple keyboards on the desktop by creating and storing your keyboards in a folder labeled "Keyboards." This permits you to conserve space on the screen.

You can mail user keyboards as well as move or copy them to a folder, a file drawer, or a floppy disk.

User keyboards are incorporated into the workstation software at the desktop level. One workstation can support multiple desktops with separate sets of user keyboards.

Second language keyboard

The second language keyboard feature makes it easy for you to type bilingual text or enter symbol-specific characters.

To use this feature, you set an alternate keyboard as your second language keyboard in the User Profile. You can then quickly toggle between the system default keyboard and the second language keyboard with one keystroke.

You can specify only one second language keyboard for your desktop. You can set a second language keyboard for any language that you have loaded on your workstation, as well as for any symbol-specific keyboard, such as the Math, Office, or Legal alternate keyboard. You can also specify your user keyboard as the second language keyboard.

You cannot, however, specify that a Special keyboard, such as the Document Special keyboard or the Graphics Special keyboard, be your second language keyboard.

More than one person can use a workstation and customize desktop keyboards for their special needs, because one workstation can support multiple desktops with different second language keyboards.

You specify the second keyboard feature by adding the **Second Language Keyboard** entry to the [System] section of the User Profile. You key in the name of the keyboard that you want to use as your second language keyboard.

When you key in the name of the keyboard that you want to use as the second language keyboard, you must key in the full name of the keyboard. Refer to Appendix A in this volume for a list of alternate keyboard names available with ViewPoint software packages.

Once you have specified the keyboard that you want, you quickly press < KEYBOARD > to display the second language keyboard that you have defined. You press < KEYBOARD > again to return to the system default keyboard.

As you switch from one alternate keyboard to another, a message displays indicating the name of the keyboard that is currently in use.

In addition, you can specify that the workstation sound a warning beep when you toggle between the second language keyboard and the system default keyboard.

You set this feature by adding the **Second Language Keyboard Feedback** entry to the [System] section of the User Profile. Two types of feedback are available: Beep or Silent.

If you would like the workstation to sound a warning beep when you toggle between the second language keyboard and the system default keyboard, key in **Beep**. If you do not want feedback when you toggle between keyboards, key in **Silent**.

Keyboard order

The Keyboard Accelerators application also enables you to specify the order in which the alternate keyboards are presented to you in the Alternate Keyboard Selection window.

You specify the order of the alternate keyboards by adding the **Order** entry to the [Keyboards] section of the User Profile.

This feature is particularly useful if your workstation is loaded with multiple language packages but, because you work in one or two languages more often than the rest, your primary keyboards represent a small subset of the total keyboards.

This feature is also useful if you often work with one or two symbol-specific keyboards, such as the Spreadsheet keyboard or Logic keyboard, and you want them to show up first in the Alternate Keyboard Selection window.

You can reorder the presentation of any keyboard in the Alternate Keyboard Selection window, including a user keyboard.

To display the names of the keyboards after you have set them in the User Profile, you select [Update Keyboard Order] from the desktop auxiliary menu.

When you specify the order of alternate keyboards, only the names of the keyboards that you type in the **Order** entry appear in the Alternate Keyboard Selection window.

For example, if you specify the order of keyboards as Legal, Office, Arabic, and Europe in the User Profile, only these four keyboards appear in the Alternate Keyboard Selection window (Figure 5-4).

Figure 5-4 Alternate Keyboard Selection window

Since one workstation can support multiple desktops with keyboard order settings for each desktop, more than one person can use the workstation and reorder the keyboards to suit their particular needs.

Figure 5-5 shows an example of the Keyboard Accelerator entries that you can add to the User Profile window.

Figure 5-5 Keyboard Accelerator entries in the User Profile
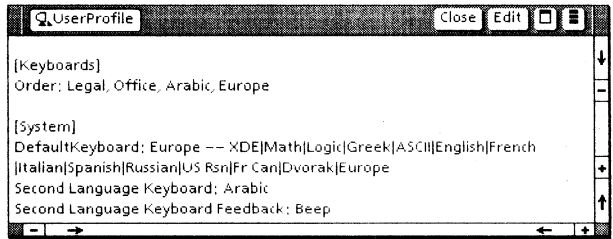
User Keyboard properties sheet

Associated with each User Keyboard icon is a User Keyboard properties sheet (Figure 5-6). You use the User Keyboard properties sheet to name the keyboard and obtain information about the keyboard.

Figure 5-6   **User Keyboard properties sheet**
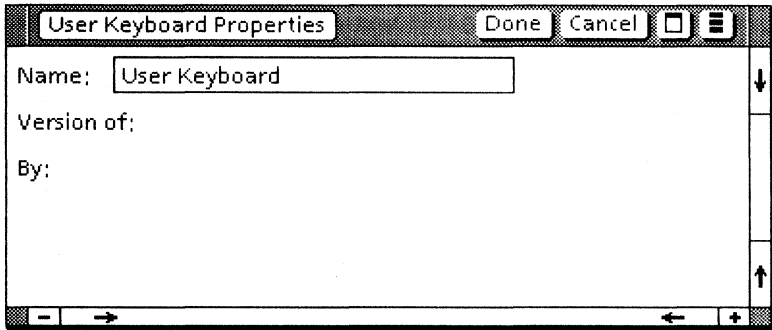
To display this property sheet, select the User Keyboard icon and press < PROP'S > .

Name
Used to name the keyboard. This name appears on the User Keyboard icon and as the title of the User Keyboard window.

Version of
Shows, in read-only format, the date and time the keyboard was created or last edited.

By
Shows, in read-only format, the name of the person who created the keyboard.

User Keyboard window

The User Keyboard window contains an editable QWERTY keyboard and several options to assist you in editing the characters on the key caps.

Use the User Keyboard window (Figure 5-7) to assign alphabetic, numeric, or symbol-specific characters to the key caps on your user keyboard.

To display this window, select the User Keyboard icon and press < OPEN >.

Figure 5-7   **User Keyboard window**
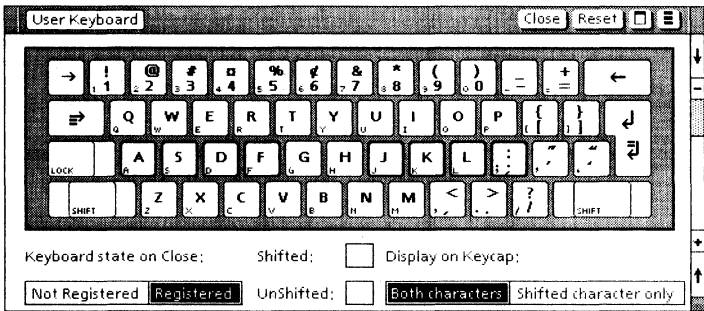
Keyboard State on Close
Indicates the status of the user keyboard. The two choices are as follows:

[Registered]
The name of the alternate keyboard appears in the Alternate Keyboard Selection window. The keyboard is available for use. When you register a keyboard, the workstation assigns it to the last key in the Alternate Keyboard Selection window.

[Not Registered]
The name of the user keyboard is removed from the Alternate Keyboard Selection window, and the keyboard is not available for use.

Note: When you unregister a user keyboard, the icon remains on the desktop until you delete it. You can leave the icon on the desktop, store it in a folder, or store it in a file drawer. You can reregister the keyboard for use at any time.

Shifted
Displays the shifted character assigned to the selected key cap.

UnShifted
Displays the unshifted character assigned to the selected key cap.

Display on Keycap
Indicates how the characters display on the key cap. The choices are:

[Both Characters]
The shifted and unshifted characters display on the selected key cap.

[Shifted Character Only]
The shifted character displays on the selected key cap.

Note: The little characters appearing in the lower left section of the key caps are always displayed. You cannot delete or edit these characters. The characters represent the keyboard layout of the standard keyboard. They are provided as a visual guide to aid you when you label the key caps on the editable QWERTY keyboard.

Creating a user keyboard

The procedures in this section describe how to create and rename the User Keyboard icon; modify the characters on the editable QWERTY keyboard; and use a user keyboard.

Getting started

1. Copy the Keyboard Accelerators application to the Application Loader icon on your desktop.

2. Select [Run] in the header of the Loader window.

3. Open the Directory divider, the Workstation divider, and the Basic Icons divider.

4. Select the User Keyboard icon and press < COPY >.

5. Move the pointer to the desktop and click the left mouse button. The User Keyboard icon is copied to the desktop.

6. Select [Close All] in the Basic Icons window header to close the series of dividers.

Renaming the User Keyboard icon

1. Select the User Keyboard icon and press < PROP'S >.

2. Press < DEL > to delete the name.

3. When the flashing caret appears, type a new name (up to 100 characters).

4. Select [Done] or press < PROP'S > to close the property sheet.

Modifying the editable QWERTY keyboard

You can use three methods to modify the characters on the editable QWERTY keyboard:

- Delete characters on the key caps.

- Rearrange characters on the key caps by copying, or moving them from one key cap to another.

- Assign new characters to the key caps using the standard keyboard or an alternate keyboard.

Rearranging characters on the key caps

1. Select the renamed User Keyboard icon and press < OPEN >.

2. Select the key cap whose characters you want to edit on the QWERTY keyboard.

   Note: You cannot edit the return, backspace, tab, < LOCK >, or < SHIFT > keys on the editable QWERTY keyboard.

3. Edit the character(s) appearing on the key cap using any of the following methods:

   - Delete the character(s) appearing on the key cap using the < DEL > key.

   - Copy the character(s) from one key cap to another key cap using the < COPY > key

     Note: If the destination key cap contains characters, a message displays asking you to confirm or cancel the copy.

   - Move the character(s) from one key cap to another key cap using the < MOVE > key.

Note: If the destination key cap contains characters, *VP Office Accessories* exchanges the key assignment of the characters on the key caps.

4. Repeat steps 2 and 3 to edit additional key caps.

Assigning new characters to the key caps

1. Select the renamed User Keyboard icon and press < OPEN >.

2. Select the key cap whose characters you want to edit on the editable QWERTY keyboard. The caret advances to the **Shifted** box.

   Note: You cannot edit the return, backspace, tab, <LOCK>, or <SHIFT> keys on the editable QWERTY keyboard.

3. Press <DEL> to delete the character appearing on the key cap and in the **Shifted** box.

4. Assign a new character to a key cap using one of the following methods:

   • Type the character that you want in the **Shifted** box using the standard keyboard.

   • Type the character that you want in the **Shifted** box using an alternate keyboard.

     Note: Refer to the *General User Reference* volume for information on using an alternate keyboard.

5. Press <SKIP/NEXT> to move the caret to the **Unshifted** box.

6. Repeat step 4 to enter a character in the **Unshifted** box.

7. Press <SKIP/NEXT> to display another key cap.

8. Repeat steps 2 through 7 to edit additional key caps.

Registering the user keyboard

1. Select [Registered] in the **Keyboard State on Close** option.

2. Select [Close] in the header of the User Keyboard window.

Using the user keyboard

1. Hold down the < KEYBOARD > key.

2. While holding down < KEYBOARD >, press the top-row function key corresponding to the name of the user keyboard.

   Note: If the name of the user keyboard does not appear, press the top-row function key corresponding to < More > to cycle through additional keyboard names.

3. To display the user keyboard, press the top-row function key corresponding to < Show >.

4. To set the user keyboard, press the top-row function key corresponding to < Set >.

5. Release < KEYBOARD >.

6. Enter your text.

Unregistering the user keyboard

1. Select your user keyboard and press < OPEN >.

2. Select [Unregistered] in the **Keyboard State on Close** option.

3. Select [Close] in the header of the User Keyboard window.

Working with a second language keyboard

1 2 3...

The procedures in this section describe how to define and use a second language keyboard, as well as how to toggle between the second language keyboard and the system default keyboard.

Note: You cannot assign a Special keyboard as the second language keyboard.

Defining the second language keyboard

1. Select [Show User Profile] from the desktop auxiliary menu. The User Profile window displays on your desktop.

2. Select [Edit] from the header of the User Profile window.

3. Scroll to the [System] section.

4. Key in the following entry:

   Second Language Keyboard:

5. Key in the name of the keyboard you want to use as the second language keyboard.

   Note: When you key in the name of the second language keyboard, you must key in the full name of the keyboard. Refer to Appendix A for a list of alternate keyboard names available with ViewPoint software packages.

6. Press the return key.

7. Key in the following entry:

   Second Language Keyboard Feedback:

8. Key in either "Beep" or "Silent" for the type of feedback that you want.

9. Select [Close] in the header of the User Profile window.

10. Log off the workstation.

11. Log on to the workstation. The second language keyboard is now available for use.

Using the second language keyboard

1. While typing text in a document, tap the <KEYBOARD> key lightly to set the second language keyboard.

   Note: A message displays indicating the name of the keyboard that is in effect.

2. Enter your text.

Returning to the system default keyboard

To return to the system default keyboard from the second language keyboard, tap the <KEYBOARD> key lightly to return to the system default keyboard.

Note: A message displays indicating the name of the keyboard that is in effect.

Updating the keyboard order
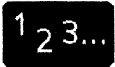
1. Select [Show User Profile] from the desktop auxiliary menu. The User Profile window displays on your desktop.

2. Select [Edit] from the header of the User Profile window.

3. Select a location in the User Profile window for the entry.

4. Key in the following entry:

   [Keyboards]
   Order:

5. Key in the names of the keyboards.

   ·**Note**: When you key in the names of the keyboards, you must key in the full name of the keyboard. Refer to Appendix A in this volume for a list of alternate keyboard names available with ViewPoint software packages.

6. Select [Close] in the header of the User Profile window.

7. Select [Update Keyboard Order] in the desktop auxiliary menu.

   Note: If you have misspelled the name of a keyboard or left the **Order** entry blank, an error message displays.

A.   Alternate keyboard names

Alternate keyboards are provided with the following ViewPoint software packages:

- *VP Arabic Text Package*
- *VP Chinese Text Capability*
- *VP Hebrew Text Package*
- *VP International Keyboards*
- *VP Japanese Text Capability*

You can enter the names of any of these alternate keyboards in your User Profile when setting parameters for the special features available with the Keyboard Accelerators application.

Table A-1 lists the spelling for each keyboard, both as it is entered in the User Profile, and then as it displays in the Alternate Keyboard Selection window.

The Alternate Keyboard Selection window displays when you hold down the < KEYBOARD > key.

The alternate keyboards provided with the ViewPoint software are not listed in the following table as they are appear in the keyboard window exactly as they are spelled in the [System] entry of the User Profile.

Note: When using *VP Chinese Text Capability*, you must be certain that the **Typing Method** you select (Pinyin-Plus or Bopomofo) in the Extended Language option sheet corresponds exactly to the entry you make in the User Profile.

Table A-1   **Alternate keyboards**

Alternate keyboard	User Profile spelling	Alternate keyboard Selection Window display
VP Albanian keyboard	Albanian	Albanian
VP Azerbaijani keyboard	Azerbaijani	Azerbaija
VP Brazilian keyboard	Brazilian	Brazilian
VP Bulgarian keyboard	Bulgarian	Bulgarian
VP Czech keyboard	Czech	Czech
VP Estonian keyboard	Estonian	Estonian
VP European II keyboard	Euro II	Euro II
VP Hausa keyboard	Hausa	Hausa
VP Hungarian keyboard	Hngarian	Hngarian
VP Indonesian keyboard	Indnesian	Indnesian
VP Latvian keyboard	Latvian	Latvian

Table A-1   **Alternate keyboards (continued)**

Alternate keyboard	User Profile spelling	Alternate Keyboard Selection Window display
VP Lithuanian keyboard	Lthuanian	Lthuanian
VP Polish keyboard	Polish	Polish
VP Portuguese keyboard	Prtuguese	Prtuguese
VP Romanian keyboard	Romanian	Romanian
VP Russian keyboard	Russian	Russian
VP Serbo-Croatian keyboard	Croatian	Croatian
VP Slovak keyboard	Slovak	Slovak
VP Slovene keyboard	Slovene	Slovene
VP Turkish keyboard	Turkish	Turkish
VP U. S. Turkish keyboard	US Trksh	US Trksh
VP Ukranian keyboard	Ukranian	Ukranian

Table A-1   **Alternate keyboards
(continued)**

Alternate keyboard	User Profile spelling	Alternate Keyboard Selection Window display
VP Uzbek keyboard	Uzbek	Uzbek
VP Vietnamese keyboard	Vietname	Vietname
Pinyin-Plus *(VP Chinese Text Capability)*	Pinyin-Plus	Pinyin-Plu
Bopomofo *(VP Chinese Text Capability)*	Bopomofo	Bopomofo
Hiragana *(VP Japanese Text Capability)*	Japanese	Japanese
Katakana *(VP Japanese Text Capability)*	Japanese	Japanese
Arabic *(VP Arabic Text Package)*	Arabic	Arabic
Arabic *(VP Arabic Text Package)*	Persian	Persian
Hebrew *(VP Hebrew Text Package)*	Hebrew	Hebrew

Index

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