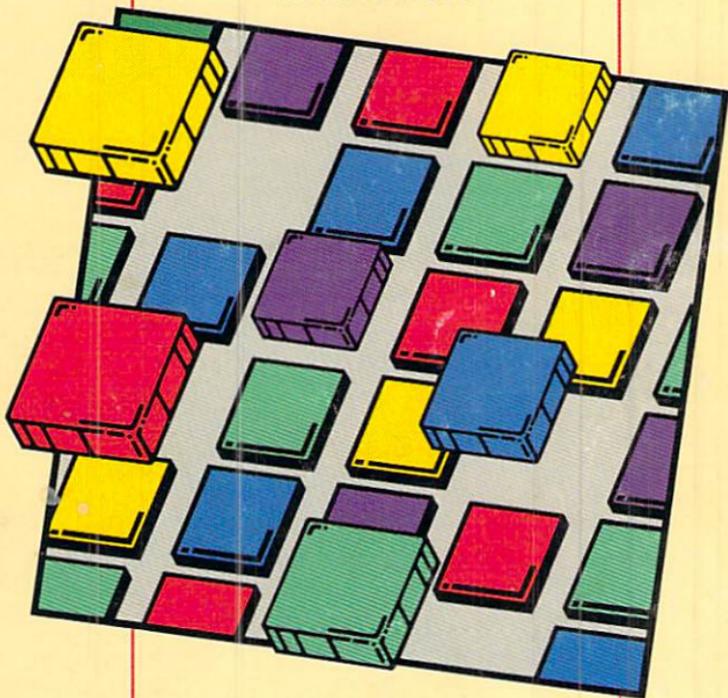


# C R E A T I V E C A L C <sup>TM</sup>

COMMODORE 64<sup>TM</sup> VERSION

An easy-to-use  
spreadsheet that  
automates time consuming  
numerical chores.



SPREADSHEET

Integrates with Creative Writer.

C R E A T I V E S O F T W A R E



# **Creative Calc**

## **INTRODUCTION**

Congratulations! You have just purchased the most complete home and personal electronic spreadsheet program available for your Commodore 64 computer. This program lets you join the hundreds of thousands of people who have found electronic spreadsheets to be the most versatile and useful program they own.

### **HARDWARE NEEDED TO RUN THIS PACKAGE**

The Creative Calc program and a sample spreadsheet are on the diskette you received with this manual. Additionally, you'll need a single disk drive and formatted disks to store the spreadsheet files you create.

If you have a VIC 1525 printer, you can print your spreadsheets. However, a printer is NOT required and the program will run just fine if you don't have one. Creative Calc is only guaranteed to print on a 1525 printer. If you have a different type, it is up to you to insure compatibility.

Creative Calc is very easy to use. You simply select the operation you want from a command menu. A submenu immediately appears, when appropriate, so that you can select the correct command option. The screen always displays what you can do next; you don't have to remember any complex commands. After just a little experience, you will seldom need this manual.

### **WHAT SPREADSHEETS ARE GOOD FOR**

If you've ever filled out a worksheet that had rows and columns, you've used a spreadsheet. A household budget is a

common example. Here's just a portion of what a simple household budget might look like.

	Jan	Feb	Mar	Apr	May	June
Salary	1200.00	1200.00	1200.00	1200.00	1200.00	1250.00
Other Income	150.00	150.00	150.00	150.00	150.00	0.00
<b>Total Income</b>	<b>1350.00</b>	<b>1350.00</b>	<b>1350.00</b>	<b>1350.00</b>	<b>1350.00</b>	<b>1250.00</b>
Rent	325.00	325.00	325.00	325.00	325.00	325.00
Utilities	70.00	70.00	55.00	45.00	35.00	40.00
Food	350.00	350.00	350.00	350.00	350.00	350.00
Clothing	40.00	40.00	40.00	40.00	40.00	40.00
Auto Expenses	200.00	200.00	200.00	200.00	200.00	200.00
Vacation	50.00	50.00	50.00	50.00	50.00	50.00
Savings	135.00	135.00	135.00	135.00	135.00	125.00
Mad Money	180.00	180.00	195.00	205.00	215.00	120.00

This spreadsheet is included on your disk under the name "BUDGET."

We put the months of the year on the top row to serve as column headings. We listed titles down the first (left) column. We just made up some values for Salary, Other Income, Rent, Utilities, Food, Clothing, Auto Expenses, and Vacation. Once we put in those values, the amounts for Total Income, Savings, and Mad Money (the famous bottom line) were calculated.

Total Income is obviously Salary + Other Income. We got the amounts for Savings by taking 10% of the Total Income for each month. To get the values for Mad Money we subtracted the sum of Rent + Utilities + Food + Clothing + Auto Expenses + Vacation + Savings from Total Income.

That's pretty easy with the help of a pocket calculator. Suppose, though, we wanted to change a few of the values. We might want to ask ourselves, "What if we increased our savings to 15%? How much Mad Money would be left?" We would need to do some erasing and recalculating. If we tried some other changes out for size, we would be in for some more erasing and recalculating.

You should prepare to spend anywhere from one to two hours going through the manual and trying out all the features the first time. Probably the best way to learn Creative Calc is to do each step on the computer as you are reading the manual.

Well, the good news is that with an electronic spreadsheet you can make changes effortlessly. Change a value, and almost instantly the computer recalculates any values that depend on the changed value. Creative Calc lets you create electronic spreadsheets, save them on the disk, load them from the disk, and print them.

You can save spreadsheets on the disk in two ways. You can save the spreadsheet itself so that you can later load and alter it. You can also save just the results that appear in the spreadsheet (without the formulas) as a "text file." This "text file" is compatible with the Creative Writer word processing program.

## **CAPACITIES AND LIMITATIONS**

Your spreadsheets are limited to 255 rows and 64 columns each. You'll probably never run into a problem that needs more capacity. The number of spreadsheets you can store on a disk is limited to the capacity of a disk and the space occupied by the Creative Calc program, and is greatly affected by the size of the spreadsheet you create. In general, you'll be able to store dozens of them on one disk.

## **USING THIS MANUAL**

This manual is written in a very specific way. It assumes that you are familiar with the Commodore 64 computer, know how to turn on the computer, load programs from the disk drive, and know the common functions of the keyboard. The manual will lead you through all the menu options, step by step, with specific examples.

# CHAPTER ONE

## Basic Operations

Turn the disk drive and computer on. BASIC will display READY. Insert the Creative Calc diskette in the disk drive. You type **LOAD "\*" ,8** and press **RETURN**. When the computer displays **READY**, type **RUN**. The screen will display:

CREATIVE CALC  
(C) 1984 CREATIVE SOFTWARE

for about 45 seconds while the rest of the Creative Calc program loads into memory. The screen then displays:

CELL AA,1 [BYTES FREE] RECALC OFF  
CREATIVE CALC. V1.0

```
]
      AA          AB          AC          AD
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
```

## CONTROLLING COLORS

Unlike this manual, the screen display is in color. Creative Calc uses color to great advantage. You can tailor the colors to your liking. Pressing CTRL-1 (this means hold down the CTRL while pressing the 1 key at the same time) changes the border color. The border color will change each time you press CTRL-1. Sixteen shades are available. Press **CTRL-1** sixteen times and you will cycle back to the shade you started with.

In the same manner, you can change the background color of the spreadsheet to any one of sixteen colors by pressing CTRL-2. Notice the color bar next to the number 1 on the spreadsheet. This is called the "cell cursor." You can change its color by pressing CTRL-3. Use these control keys now to see how they work and to find the color combination that pleases you. Note that CTRL 4, CTRL 5, CTRL 6, will also change the colors of the text displayed on the screen.

## AREAS OF THE SCREEN

The top line of the screen is called the "status line." We'll explain what it tells you in just a moment.

Notice the second line on the screen; this line is called the "prompt line." Let's identify all parts of the screen so we can talk about them. Just like a paper spreadsheet, Creative Calc's electronic spreadsheet is divided into rows and columns. The rows are numbered down the left, and the columns are designated by letters of the alphabet. The intersection of a column and row is called a "cell."

Just under the prompt line, is the "cell input area," which we'll refer to simply as the "input area," or the "input buffer." The blue rectangle with the right bracket symbol is the "input cursor." You will use this input area to make entries in the spreadsheet. But before we make any entries, let's see how you move around the spreadsheet.

## MOVING AROUND THE SPREADSHEET

Cells are identified by column and row. The cell cursor is at column AA, row 1. Or, to say it more simply, the cell cursor is at cell AA,1. You can move the cell cursor with the CRSR, HOME, and CLR keys. As you move the cell cursor, you will see the status line change to reflect the current position of the cell cursor.

What you see on the screen now is just the upper left-hand corner of the spreadsheet. You see only four columns and nineteen rows, but the actual size is 64 columns by 255 rows. As you move the cell cursor to the right, past column AD, you will see that the screen scrolls. With the cell cursor at column AE, column AA has scrolled off the left of the screen. As you move the cell cursor down past row 19, row 1 has scrolled off screen. Think of the screen as a window through which you are looking to view a very large spreadsheet.

The CRSR keys repeat when you hold them down. This greatly speeds up moving around on the spreadsheet. There are even quicker ways to move the cell cursor. Pressing the HOME key jumps the cell cursor to the upper left cell on the screen. Pressing the CLR key jumps the cursor to cell AA,1. Also, in a moment you'll see how to jump the cursor to any cell with the GO TO command.

## ENTERING TEXT

There are just three types of data you can enter into a cell: text, values, and formulas. Text entries are usually used to make titles for columns and rows. You can also enter text anywhere on the spreadsheet for making comments or whatever you wish.

To enter text, just type the text as you normally would. The typed text appears in the input area as you type. As you type the first character, the prompt line changes to read, "TEXT."

Creative Calc looks at the first character you type to decide whether you are entering text, a value, or a formula. If the first character is a letter of the alphabet, Creative Calc knows you are entering text.

If you want to enter text that starts with a non-alphabetic character (such as a minus sign), type the double quote mark (") as the first character. The quote mark tells Creative Calc that this is a text entry. The quote mark itself will not be considered part of the text.

You can use the INST (insert) key and the DEL (delete) key to edit your entry in the input area. DEL deletes the character to the left of input cursor. INST inserts a blank space at the cursor position. You can then type a character in the blank space. You can move the input cursor with the f 5 and f 7 function keys. f 5 moves the cursor to the left, and f 7 moves it to the right. These four keys give you complete editing ability.

You can enter up to 119 characters in the input area. When you type the 119th character, the prompt line displays, "YOUR INPUT BUFFER IS FULL."

After typing the text, you enter it in the active cell by pressing RETURN or one of the CRSR keys. Using a CRSR is usually best because you save keystrokes. Normally you want to make your next entry in a neighboring cell. As entries are made, the status line changes to show how many bytes of memory are available for more spreadsheet entries.

Your text entry can be as long as the edit area will hold. However, only as many characters as will fit in a single cell will be displayed on the worksheet. When Creative Filer is first loaded, all the columns are eight characters wide, so only eight characters of text will be displayed. You'll learn how to change column width a little later.

Column width is really no problem with text anyway. Suppose you want the title "Household Budget" in the upper left-hand corner of the spreadsheet. With the cell cursor at cell AA,1, type "**H**ousehold" and move the cell cursor to cell AB,1 with the CRSR key. Then type "**d** Budget" and move the cell cursor again. The title "Household Budget" will be displayed. With a little practice you will find yourself putting text of any length anywhere you want it with no trouble at all.

## ENTERING NUMBERS

To enter a number, type the number into the input buffer and then press RETURN or one of the CRSR keys, just as you do for text entries. Only digits and a single decimal point should be typed. When you type the first digit, the prompt line displays, "VALUE OR FORMULA." This tells you that Creative Calc is expecting either a numerical value or a formula.

If you mistakenly include a character that is not a digit or decimal point, the cell will usually display, "ERR\*ERR\*." If the character you mistakenly enter could be part of a legitimate part of a formula, Creative Calc will think you have entered a formula and accept it. The results depend on what you type, but you'll see that you didn't get the results you wanted.

If you enter a number that is too big to fit in the cell, the cell will display "////////." Values are displayed so that there will be at least one blank space between columns. This means that if a cell is eight characters wide, only seven spaces are available to display the value.

The cell format also affects which value entries are acceptable. Most of the values people put in spreadsheets are dollars and cents. So, the default display format of Creative Calc is to display values with two decimal points. (The word "default" means how the program will do things if you don't tell it how.) The table below shows the results of various entries with default settings of cell width=8 and value format=two decimal places.

<u>ENTRY</u>	<u>RESULT</u>	<u>COMMENT</u>
0	0.00	
01	1.00	
12	12.00	
123	123.00	
1234	1234.00	
12345	// // // //	12345.00 is too long to display
1.234	1.23	The value is rounded down
1.235	1.24	The value is rounded up
123G	ERR*ERR*	The letter G is invalid

## ENTERING FORMULAS

Formulas are the things that make electronic spreadsheets so powerful. When a formula is entered into a cell, the cell displays the value of the formula. To make a formula you can use numbers, functions, and cell references, and the symbols for addition (+), subtraction (-), multiplication (\*), division (/), and exponentiation ( ).

You enter formulas in the same manner as you did values. If you've never written formulas in a single line before, there are a few new rules to learn. Let's take the precedence rules first. Precedence rules are concerned with the order in which arithmetic operations are done. Suppose you have the formula, "2+3\*4." The value depends on whether you add first or multiply first. If you add first you get 2 plus 3, which is 5, times 4, which equals 20. If you multiply first you get 3 times 4, which is 12, plus 2, which is 14. Which is the correct answer?

Creative Calc evaluates this formula as the value 14. The precedence rules for Creative Calc are:

1. Exponentiation
2. Multiplication and division
3. Addition and subtraction

You can use parentheses to change the order of calculation. For example, the formula  $(2 + 3) * 4$  evaluates to 20.

To include the values of other cells in a formula, use the cell column letters and row number, such as AC,25. For example, suppose you want to multiply 3 times the value of cell AA,1 and divide the result by the value of cell AA,2. You would type `"3 * AA,1 / AA,2."` You can enter blank spaces to make formulas easier to read or run everything together; Creative Calc doesn't care. Typing `"3*AA,1/AA,2"` works just fine.

There is another way to enter cell references in a formula by using the CRSR keys. Suppose you had already entered value 4 in cell AA,1 and the value 2 in cell AA,2. Assume you want to enter the formula `"3 * AA,1 / AA,2"` in cell AA,3. Here are the steps:

1. Move the cell cursor to cell AA,3.
2. Type `"3 *"` into the input buffer.
3. Move the cell cursor to cell AA,1. You will see `"AA,1"` has been added to the input buffer display.
4. Type `"/"` into the input buffer. You will see the cell cursor jump back to cell AA,3.
5. Move the cell cursor to cell AA,2. You will see `"AA,2"` has been added to the input buffer display.
6. Press **RETURN**. You will see the cell cursor jump back to cell AA,3 and the number 6.00 displayed in this cell.

This sounds a lot more complicated than it is. Try it out; it's easy and it's fun.

## CORRECTING OR CHANGING ENTRIES

Correcting or changing entries is easy. Just move the cell

cursor to the cell you want to change. The entry in that cell appears in the input buffer and the input buffer cursor is at the left. You then use the editing capabilities to change what is in the input buffer. After making any changes, press **RETURN**. The cell display changes instantly.

If the value of a changed cell is referenced by formulas in other cells, the values of those other cells are affected. Their values will be recalculated and displayed immediately *if* automatic recalculation is turned on. The status line tells you whether recalculation is on or off by displaying "RECALC OFF" or "RECALC ON." You can turn recalculation on or off using the command menu described in the next chapter.

You can build up your spreadsheet faster with recalculation turned off. As the spreadsheet gets larger and more formulas are involved, recalculation can take several seconds. Of course, when you are changing key values on a completed worksheet to ask "What if . . ." questions, you will want it turned on. You can command a recalculation anytime by typing the exclamation mark (!).

This would be a good time to experiment to fix the points we've discussed in your mind. Move the cell cursor around, using the **CRSR**, **HOME**, and **CLR** keys. Enter some text, and try entering some titles that span several cells. Enter some small values in some of the cells, and then enter some formulas in other cells that reference cells with values in them. Use the cell cursor positioning method of entering cell references as well as typing the entire formula.

By using small values for these experiments you can calculate the results in your head and see if Creative Calc comes up with the same results. The precedence rules can be a little tricky at first, but you'll quickly get used to them. Remember, you can always use parenthesis. Some people always use parenthesis for clarity even when they aren't needed.

# CHAPTER TWO

## Using The Command Menu

Pressing function key **f 1** takes you to the "command menu." The prompt line displays, "ENTER THE FIRST LETTER OF A COMMAND." The menu options are displayed in what was the input area of the screen. There are nine options. The first letter of each option is displayed in reverse video. The options are as follows:

- COPY** — lets you copy an area of the spreadsheet to another area, copy any portion of a row to a lower row, and copy any portion of a column to a column to its right. You can adjust formulas during this copy.
- DISK** — lets you initialize a disk, display a directory of the spreadsheet files on the disk, and load or scratch (erase) a spreadsheet.
- ERASE** — lets you erase contents of a single cell, a row of cells, or a column of cells.
- FORMAT** — lets you change column widths, format a single cell, format all the cells in the worksheet, and fix a column in place.
- GO TO** — lets you position the cell cursor to any cell instantly.
- INSERT** — lets you insert a row or column.
- LOAD** — lets you load a spreadsheet.
- NEW** — lets you clear the worksheet in memory so that you can start a new one.
- PRINT** — lets you print any area of the worksheet.
- QUIT** — lets you quit Creative Calc and return to BASIC.
- RECALC** — lets you recalculate by row or column.
- SAVE** — lets you save on disk either the spreadsheet or just the results displayed in the cells.

We will explain how to use each of these options. You will learn faster and easier if you try them out as you read them. If you want to abort a command at this or a later time, press the RUN/STOP key.

## **COPY**

Enter "C" and the input buffer area displays:

**COPY : AREA  
ROWS DOWN  
COLUMNS TO THE RIGHT**

You select the AREA option to copy all the cells in a rectangular area of the worksheet to another rectangular area of cells. If you enter "A" the status line displays: "ENTER TOP LEFT CELL OF A SOURCE AREA.", and the position of the cell cursor is displayed in the input buffer area. If this is the top left cell of the source area, press RETURN. If it isn't, you can either type in the proper cell coordinates or move the cursor. You have this choice (typing cell coordinates or moving the cell cursor) in all the cases that follow.

When you press RETURN, the prompt line displays, "ENTER BOTTOM RIGHT CELL OF SOURCE AREA." You identify the bottom right cell in the same way. When you press RETURN, the prompt line displays, "ENTER TOP LEFT CELL OF DESTINATION AREA." Again, you identify this cell either by typing the coordinates or moving the cell cursor.

When you press RETURN, the prompt line displays, "ENTER THE FIRST LETTER OF A COMMAND." The input buffer area displays:

**ADJUST : ALL  
NONE  
INDIVIDUALLY**

The purpose of this submenu is to let you tell Creative Calc how to treat any formulas in the cells you are copying (text and numerical values aren't affected by copy). You may or may not want Creative Calc to adjust the formulas when they are copied. This is an extremely important feature. Let's take a simple example. Suppose you are going to copy cells AA,1 and AA,2 and that AA,1 contains the value 4 and AA,2 contains the formula  $2*AA,1$ . Now suppose you copy them to cells AB,1 and AB,2.

With no adjustment AB,1 would contain the value 4 and AB,2 would contain the formula  $2*AA,1$ . No surprises there, just plain old copying. But with adjustment, things are quite different. AB,1 would still contain the value 4 but AB,2 would contain the formula  $2*AB,1$ ! Note that's AB,1 and not AA,1. What happened? When you ask Creative Calc to adjust formulas when they are copied, the formulas are adjusted to maintain the same *relationship*.

Notice that the formula in cell AA,2 refers to the cell just above it, namely AA,1. Notice also that the formula in AB,2 also refers to the cell just above it, namely AB,1. This is what we mean when we say the formulas are adjusted to maintain the same relationship in the copies as in the originals. Now that you know what "adjust" means, let's look at those options again.

If you enter "A", all the formulas are adjusted. If you enter "N", none of them are. If you enter "I", Creative Calc displays each formula in the input buffer area and asks you, "SHOULD I ADJUST THIS REFERENCE ? Y OR N." You reply with a "Y" or "N" as appropriate and Creative Calc displays the next formula. When you replay for the last formula in the area, the copy takes place and you are returned to the initial display.

To just move a column or row from one area in the spreadsheet to another, use the COPY AREA command with the ADJUST NONE option.

## DISK

When you enter "D" the screen displays:

**DIRECTORY**  
**INITIALIZE**

**LOAD**  
**SCRATCH**

Enter a "D" to select DIRECTORY. The names of all the disk files are displayed along with a wide cursor. To load or scratch a file, simply move the cursor over the file name with the CRSR keys and select the option you want. Follow the instructions on the prompt line. Note that if you try to load a non-spreadsheet file, Creative Calc will tell you: "This file is incompatible! Press RETURN." Just press the RETURN key.

**WARNING! BE CERTAIN YOU  
DON'T HAVE A DISK WITH  
ANYTHING OF VALUE ON IT  
WHEN YOU CHOOSE THE  
INITIALIZE OPTION.**

To initialize a disk, put the disk to be initialized in the disk drive and type "I." The program asks: Enter disk name, i.d. You should type in a name (up to 16 characters), a comma, and a two-letter identifier. When you press RETURN, you'll get the message: INITIALIZING DISK, PLEASE WAIT. . . . After about one minute, the initialization is done; press RUN/STOP to return to the spreadsheet.

## ERASE

You must move the cell cursor to the cell you want to erase, or the first of the cells you want to erase in a row or column before pressing f 1 to go to the command menu.

Enter an "E" to select ERASE. The input buffer area will display:

**ERASE : THIS CELL  
ROW OF CELLS  
COLUMN OF CELLS**

To erase a single cell, enter "T." The prompt line will read, "PRESS RETURN TO ERASE THIS CELL." Pressing RETURN erases the cell.

To erase a row of cells, enter "R." The prompt line will read, "ERASE ROW: ALL PART." If you choose "A" and then press RETURN, the entire row will be erased, all subsequent rows will be moved up and their formulas adjusted. Press RUN/STOP if you don't want to do this. If you choose "P," you'll be prompted to enter the coordinates of the last cell in the row you want to erase. Type this in (or move the cursor to that cell) and press RETURN to erase the cells.

Erasing columns is exactly the same as erasing rows.

**FORMAT**

If you want to change column width, format a single cell, or fix a column so it will not scroll off screen, you must move the cell cursor *before* pressing f 1 to go to the command menu.

Enter an "F" to select FORMAT. The input buffer area displays:

**COLUMN WIDTH  
CELL FORMAT**

**GLOBAL FORMAT  
WINDOW**

**Changing Column Width**

Enter a "C" to change the width of the column. The input buffer area displays:

**SET A COLUMN  
SET A GROUP OF COLUMNS**

Enter a "C" to set the width of column the cell cursor is on. The prompt line reads, "CURRENT WIDTH IS 8. ENTER NEW WIDTH." (or whatever the current width is). Enter the width you want into the input buffer and press RETURN. If you enter an unacceptable width, the prompt line reads, "MIN. WIDTH IS 2 MAX. IS 37 TRY AGAIN." If you entered an acceptable width, the column width changes instantly.

Enter a "G" to set a group of columns to a new width. The prompt line reads, "SET WIDTH OF HOW MANY COLUMNS TO RIGHT?" Enter a number, such as 5, into the input buffer and press RETURN. The prompt line reads, "ENTER A WIDTH FOR THESE COLUMNS." Enter the width you want (same limits as for a single column) into the input buffer and press RETURN. The width of the selected columns changes instantly.

### Formatting a Single Cell

*You cannot change the format of an empty cell with this option.*

You must move the cell cursor to the cell you want to format before pressing f 1 to go to the command menu. Enter an "F" to change the format of the selected cell. The prompt line reads, "SELECT FORMAT. PRESS RUN/STOP WHEN DONE." If the selected cell contains a numerical value, the input buffer area displays:

**LEFT**

**RIGHT**

**SET DECIMAL POINT**

**CENTER**

with a check-mark in front of LEFT, RIGHT, or CENTER to indicate the current format.

These three options let you control how text or values are displayed in a cell. You can position anything in the cell at the left, center, or right. Of course, if the text or value completely

fills the cell, you won't see any difference. Type an "L", "R", or "C" to make your selection. The check-mark moves.

Type an "S" to set the decimal point. The prompt line reads, "HOW MANY DECIMAL PLACES ? IT IS NOW 2." (or whatever the current setting is). Enter the number of decimal places (zero is OK too) into the input buffer and press RETURN.

You can select position and decimal point format in any order. When you are done making your selections, press RUN/STOP. The change in format is instantly displayed.

If the cell you selected to format contains text, the "SET DECIMAL POINT" option is not offered, because it makes no sense with text.

### **Global Formatting**

You can format all the cells at once if you wish. It doesn't matter where the cell cursor is. Enter a "G" to select GLOBAL FORMAT. The prompt line reads, "ENTER THE FIRST LETTER OF A COMMAND." The input area displays:

**GLOBAL FORMAT**  
**TEXT**  
**VALUE**

### **Formatting Text**

Enter a "T" to select text. The prompt line reads, "SELECT FORMAT. PRESS RUN/STOP WHEN DONE." The input area displays:

**LEFT**  
**RIGHT**  
**CENTER**

with a check-mark in front of the format currently in effect. Make your selection by entering "L," "R," or "C" and pressing RUN/STOP.

## Formatting Values

Enter a "V" to select VALUE. The prompt line reads, "SELECT FORMAT. PRESS RUN/STOP WHEN DONE." Input area displays:

**LEFT**

**RIGHT**

**SET DECIMAL POINT**

**CENTER**

with a check-mark in front of LEFT, RIGHT, or CENTER to indicate the current format.

The LEFT, RIGHT, and CENTER options let you control how your values are displayed in a cell. You can position anything in the cell at the left, center, or right. Type an "L", "R", or "C" to make your selection. The check mark moves.

Type an "S" to set the decimal point. The prompt line reads, "HOW MANY DECIMAL PLACES ? IT IS NOW 2." (or whatever the current setting is). Enter the number of decimal places (zero is OK too) into the input buffer and press RETURN.

You can select position and decimal point format in any order. When you are done making your selections, press RUN/STOP. The change in format is instantly displayed.

## Fixing a Column In Place — Window

You will often use column AA for titles when you create spreadsheets. As you move the cell cursor to the right the columns on the left scroll off screen. The WINDOW option lets you keep any one column fixed in place at the left of the screen. You must select the column you want to fix before going to the command menu.

Move the cell cursor left or right until the column you want to fix in place is the left-most column on the screen. Then go to the command menu, select FORMAT, and enter a "W" to

select WINDOW. The prompt line reads, "PRESS "W" TO TURN WINDOW ON/OFF." The input area displays WINDOW OFF. Type a "W" to turn the window on (fix the left-hand column in place).

If you now move the cell cursor right and left, the left-most column remains in place. Follow the same steps to turn the window off.

## GO TO

When the menu is displayed, type a "G" to select GO TO. The prompt reads, "ENTER THE COLUMN, ROW NUMBER OF THE CELL." To move the cell cursor to column AM, row 45, you would type "AM,45" and press RETURN. The spreadsheet display changes instantly to put the cell cursor in the upper left corner and at cell AM,45.

## INSERT

Move the cell cursor *before* pressing **f 1** to go to the command menu. Creative Calc inserts a row or a column at the cell cursor position. Current rows are pushed down and current columns are pushed to the right to make room.

Type an "I" to select INSERT. The prompt reads, "ENTER THE FIRST LETTER OF A COMMAND." and the input buffer area displays:

**INSERT A :  
ROW  
COLUMN**

Type an "R" to insert a new row, or a "C" to insert new column. Then press **RETURN**. The new row or column appears instantly. A new column is always 8 characters wide. You can change the width with the **FORMAT** command.

## NEW

Type an "N" to select NEW. The prompt line reads, "DO YOU WISH TO KEEP THIS SHEET ?" If you type a "Y" the command is aborted. If you type a "N" the prompt reads, "DO YOU WISH TO START A NEW SHEET ?" If you type an "N" the command is again aborted. If you type a "Y" the entire spreadsheet is cleared, and you are back to where you were when you first loaded Creative Calc.

This may seem a little foolish making you answer two questions instead of just one. It's a safety precaution to prevent accidentally wasting your time. If you build a spreadsheet and execute the NEW command before saving it to disk, all your effort is wasted.

## PRINT

Type a "P" to select PRINT. The prompt line reads, "ENTER TOP LEFT CELL OF PRINT AREA." and the coordinates of the current cell cursor position are displayed in the input buffer area. You can change the coordinates either by typing in new coordinates or moving the cell cursor with the CRSR keys.

When you have the coordinates you want, press **RETURN**. The prompt reads, "ENTER BOTTOM RIGHT CELL OF PRINT AREA." Again, either type in the coordinates or move the cursor, and press **RETURN**.

The prompt line reads, "WHAT TYPE OF PRINTER DO YOU HAVE ?" and the input buffer area displays:

### COMMODORE ASCII

Type a "C" if you have a Commodore or compatible printer connected to the computer. Type an "A" if you have any other

printer connected. Then press **RETURN**. The prompt line reads, "HOW MANY COLUMNS ON YOUR PRINTER ?" Enter the appropriate number and press **RETURN**.

The prompt line reads, "ENTER A TITLE FOR THE PAGE HEADER." Enter whatever title you want into the input buffer. You can use all the editing capabilities just as you did when building your worksheet. You also have the same restriction on length, namely 119 characters. Also, you shouldn't have a title that exceeds the column width of your printer.

This last statement isn't a hard and fast rule. It depends on your printer. Do some experimenting.

After entering your title, press **RETURN** and the printer should start printing out the area of the worksheet you identified. You can stop the printout at any time by pressing the **RUN/STOP** key.

## **RECALC**

Type an "R" to select **RECALC**. The prompt reads, "SELECT RECALC MODE. RUN/STOP WHEN DONE." and the input buffer area displays:

**RECALCULATE BY**  
**ROW**  
**COLUMN**

with a check-mark in front of **ROW** or **COLUMN** to indicate the current mode. Type an "R" or a "C" to select the mode you want. **ROW** mode means that Creative Calc recalculates the values of all formulas in the worksheet row by row. Recalculation starts at the left-hand cell of the first row. It proceeds to the right until the end of the row is reached, and then goes to the left-hand cell on the next row. It recalculates column by column, starting at the top left cell, in the **COLUMN** mode.

Which mode you pick depends on how you design your spreadsheet. Formulas in cells should reference other cells that are either to the left or above the cells containing the formulas. You have to think about this for a minute to understand it.

You should arrange things so that when the value for a cell, such as AL,10 is recalculated, all the cells referenced by the formula in cell AL,10 have been calculated already. If all the referenced cells are in rows above row 10, you can be certain they have already been recalculated if you pick the ROW mode. If all the referenced cells are in columns to the left of column AL, you can be certain they have already been recalculated if you pick COLUMN mode.

## **QUIT**

Type a "Q" to select QUIT. The prompt reads, "DO YOU WISH TO QUIT CREATIVE CALC. ?" If you type anything but a "Y" the command is aborted. If you enter "Y" the prompt line reads, "PRESS RETURN TO QUIT." You can abort the command by hitting any key other than the RETURN key. This slightly complicated procedure is a safety measure to prevent you from accidentally wasting a lot of effort.

If you press RETURN, you exit Creative Calc and the READY prompt is displayed.

## **SAVE**

Type an "S" to select SAVE. The prompt line reads, "ENTER THE FIRST LETTER OF A COMMAND." The input buffer area displays:

**SAVE  
SPREADSHEET  
RESULTS**

To save the spreadsheet so that it can be loaded again later, type an **"S."** The prompt reads, "ENTER FILENAME." Enter a file name up to 16 characters long into the input buffer, and press **RETURN**. The prompt reads, "SAVING...PLEASE WAIT" while the spreadsheet is being saved.

To save just the results, in other words, just what is displayed on the spreadsheet, type an **"R."** The prompt reads "ENTER TOP LEFT CELL OF AREA TO SAVE." and the input buffer displays the coordinate of the current cell cursor position. Either type the coordinate you want or move the cursor. Then press **RETURN**.

The prompt reads, "ENTER BOTTOM RIGHT CELL OF AREA TO SAVE." Again either type in the coordinates or move the cursor, and press **RETURN**. The prompt reads, "ENTER FILENAME." Enter the file name into the input buffer and press **RETURN**. The prompt reads, "SAVING...PLEASE WAIT" while the results are being saved.

You can now include this spreadsheet in a document created with Creative Software's word processing program *Creative Writer*.

# CHAPTER THREE

## Math Functions

In addition to the standard arithmetic functions you've been using (+, -, \* and /), Creative Calc supports the following math functions:

**@sin(arg)** : calculates the sin of the argument (arg). Argument must be in radians.

**@cos(arg)** : calculates the cosine of the argument. Argument must be in radians.

**@atn(arg)** : calculates the arctan of the argument.

**@exp(arg)** : calculates the value of 10 raised to the power (or  $10^x$ ) (arg).

**@log(arg)** : calculates the logarithm, base 10, of the argument.

**@abs(arg)** : calculates the absolute value of the argument.

**x↑y** : calculates x raised to the y power.

**@sum(column, row > column,row):**

Calculates the sum of all the elements in either a row or column. The row and column must be in the proper form (e.g., ab,5) and the "greater than" sign, >, is used to indicate the range of the sum. When you use this function, you can either type in the cell coordinates directly, or move the cursor to indicate the starting and ending cell coordinates. Don't forget to include the right parenthesis to close the expression.

None of the above functions, with the single exception of **@sum**, requires the parentheses, but it is recommended that you use them in order to make the function more readable.

# Quick-Reference Summary of Creative Calc Commands

**Size** — 64 Columns by 255 Rows

**Memory usage** — [Bytes Free] of RAM for a spreadsheet

## CONTROL KEYS AND FUNCTION

**CRSR Up Down** — Moves Cell Cursor up and down.

**CRSR Left Right** — Moves Cell Cursor left and right.

**RUN/STOP** — Aborts current command.

**CLR** — Puts Cell Cursor at cell 1,1.

**HOME** — Puts Cell Cursor at top left cell on screen.

**INS** — Inserts a space before current character in edit buffer.

**DEL** — Deletes current character from edit buffer.

**RETURN** — Enters content of edit buffer into current cell.

**F1** — Brings up command menu.

**F2** — Move cursor up 1 page.

**F3** — Recalc toggle ON/OFF.

**F4** — Move cursor down 1 page.

**F5** — Moves edit cursor left 1 character.

**F6** — Move cursor left 1 page.

**F7** — Move edit cursor right 1 character.

**F8** — Move cursor right 1 page.

**Ctrl 1** — Border color

**Ctrl 2** — Background color

**Ctrl 3** — Sheet color

**Ctrl 4** — Information row color

**Ctrl 5** — Message row color

**Ctrl 6** — Cell buffer color

**Ctrl 7** — Row / Column color

## COMMANDS

### COPY

**Area:** Enter top left and bottom right of area to copy to; then the top left corner of the area to copy to.

**Rows:** Enter last cell in the row to copy from; current cell is the first. Then enter the last row to be copied to.

**Columns:** Enter last cell in column to be copied; current cell is first. Then enter the last column to copy to.

During any copy you will be asked how to adjust any cell references encountered during the copy.

**Adjust All** — All cell references are adjusted.

**Adjust None** — No cell references are adjusted.

**Adjust Individually** — You will be asked each time a cell reference is encountered if it should be adjusted.

### DISK

Brings up the disk directory. The cursor can be used to select a file to load or scratch. A disk may be initialized or load another directory.

### ERASE

**This cell:** Removes current cell from sheet.

**Row:** Erases all or part of a row. If all, then the rows below it are moved up and all cell references are adjusted.

**Column:** Erases all or part of a column. If all, then the columns to the right are moved left and all cell references are adjusted.

### FORMAT

**Column Width:** One or a group of columns may have their widths set from 2 to 33 characters wide.

**Cell Format:** You may specify how a cell will be displayed; left, right, or center justified. A value may have 0 to 12 decimal places.

**Global:** You may select how text and values will be displayed over the entire sheet. A cell that has had its format set earlier will not be affected.

**Window:** A vertical window into the sheet may be opened. The window will be the left-most column on the screen when the window is turned on. The window will scroll up and down aligned with the rest of the sheet.

## **GO TO**

Lets you move to any cell in the sheet.

## **INSERT**

Insert a row or column into the sheet. Automatically adjusts references to affected rows and columns.

## **LOAD**

Brings up disk directory, then the cursor is used to select the file to load. If it is not a spreadsheet, a message will be displayed and the sheet cleared.

## **NEW**

Clears the sheet.

## **PRINT**

Outputs an area of the spreadsheet to your printer. Lets you specify type of printer, number of columns, and page header. If no header is given, no margin at the top or bottom of the page is allotted. Otherwise there will be a top and bottom border.

## QUIT

Puts you into BASIC.

## RECALC

Selects mode of recalculation, by row or column.

## SAVE

Save a sheet to disk. Can be saved as either a working file to be reloaded later or as a text file that can be transferred to the word processor.

The exclamation mark (!) does an immediate recalculation of the entire spreadsheet.

## MATH FUNCTIONS

All math functions must be preceded by a "@".

@Sin(arg): Sine

@Cos(arg): Cosine

@Atn(arg): Arctan

@Exp(arg):  $10^x$

@Log(arg): Log Base 10

@Sum(CC,RRR > CC,RRR)(arg): Adds values in rows or columns.

@Abs(arg): Absolute value of X. X must be in parentheses.

X↑Y(arg): X raised to the Y power.

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