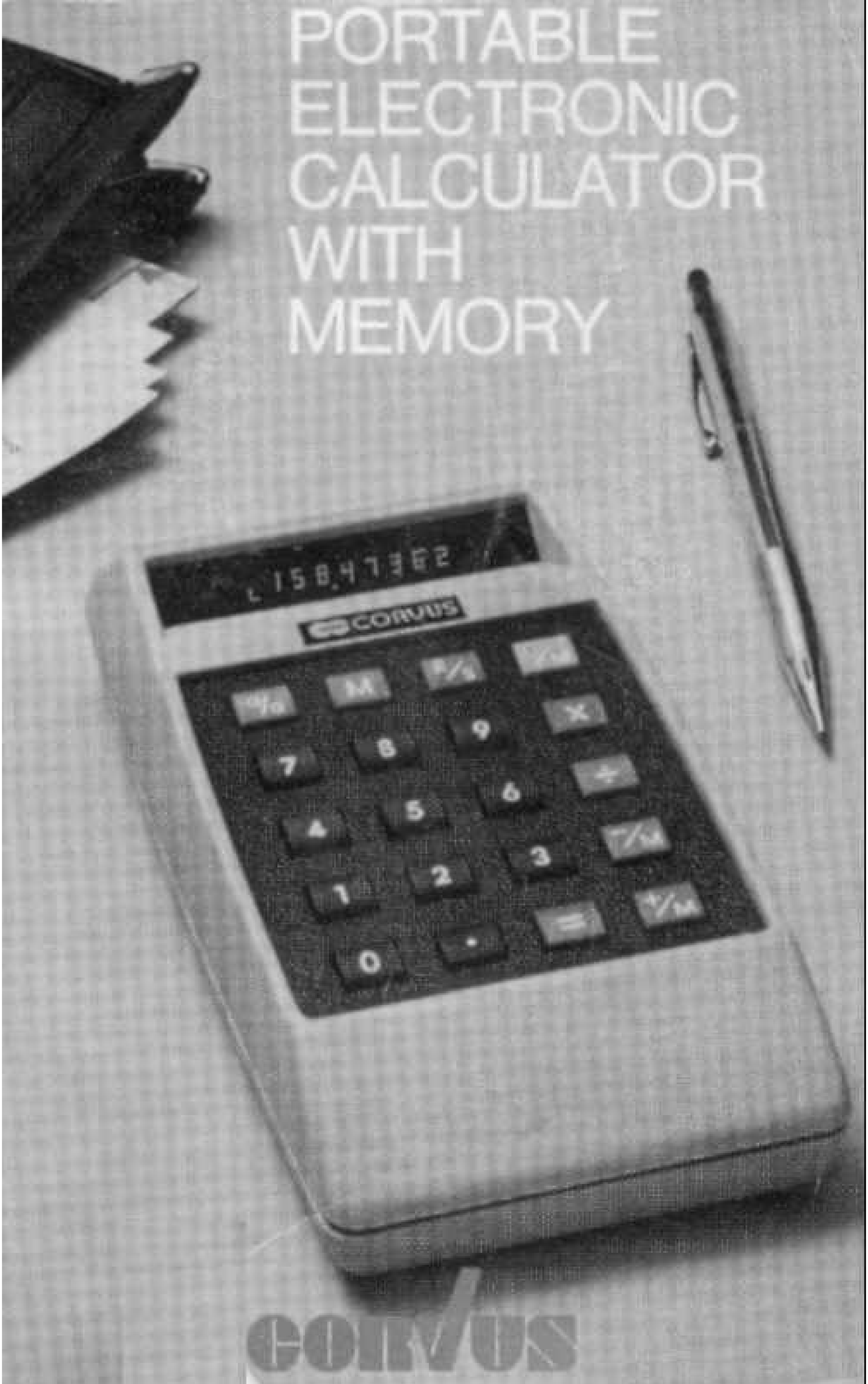
PORTABLE ELECTRONIC CALCULATOR WITH MEMORY



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ABOUT YOUR CALCULATOR

Your new portable calculator integrates a versatile five-function calculator with a fully accessible memory to provide calculating power usually reserved for much larger machines. Your hand-held calculator allows you to separate your problems into two independent operating modes and then recombine for final problem-solving. This "scratch-pad" mode of operation satisfies and facilitates a wide variety of applications found in the home, business, school, or in the field. The following sections of this book point out calculator features and detail problems you may relate to your own unique problems.

FEATURES

- **Full memory capability (+, —, Recall, Store, and Clear)**
- **Automatic constant on all functions**
- **Floating decimal**
- **Floating negative sign**
- **Eight digits plus symbols**
- **Memory-in-use indicator**
- **Five functions: +, —, %, ×, ÷**
- **Algebraic data entry**
- **Unique positive-touch keyboard**
- **Long battery life**
- **Optional AC operation**
- **Obtains reciprocals (1/x) and powers automatically**

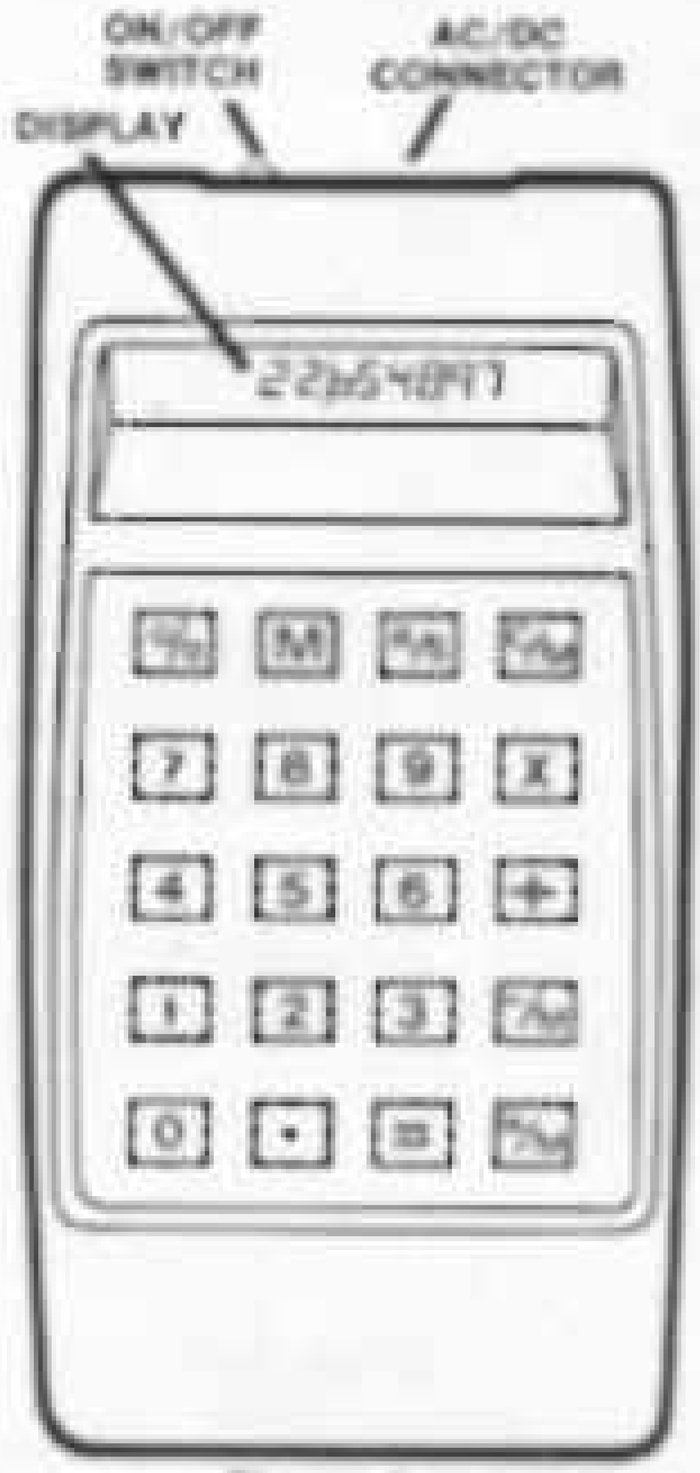

Figure 1

CALCULATOR OPERATION

ON-OFF SWITCH

The On-Off switch is located on the top end of the calculator (see Fig. 1). Turning to "OFF" completely clears calculator.

NUMERIC KEYS

0 - 9 These keys are used to enter the numbers.

DECIMAL KEY

. In decimal fractions, this key is used to enter the decimal point in its proper place.

OPERATION KEYS

M Instructs the calculator to perform the next operation upon the contents of memory. The operation to be performed is determined by depressing either of the following keys; **+/M** , **−/M** , **C/M** or **R/S** .

See "Memory Use," Page 7.

+/M Instructs the calculator to add the displayed number to the next numeric entry. During chain calculations it will simultaneously complete any previous calculation.

If this key is used immediately after the **M** key, the displayed number is added to the contents of memory. In this mode it does not complete any previous calculation. (See "Memory Use.")

−/M Instructs the calculator to subtract the **next** entry from the displayed number. During chain calculations it will simultaneously complete any previous calculation.

If this key is used immediately after depressing the **M** key, the displayed number is subtracted **from** the contents of memory. (See "Memory Use.")

X Instructs the calculator to multiply the displayed number by the **next** numeric entry. During chain calculations it will simultaneously complete any previous calculation.

÷ Instructs the calculator to divide the displayed number by the **next** numeric entry. During chain calculations it will simultaneously complete any previous calculation.

% Use this key to determine a percentage or a percentage rate as a whole number (rather than in terms of 1/100ths).

= This key terminates calculations previously begun (division, multiplication, etc.). It is the operative key when calculating with constants. See page 13 for examples of calculations.

C/M

- When depressed after any operational key **C/M** clears display and "erases" previous operational instructions. Display returns to "0.", or to "L 0." if any quantity remains in memory.
- Can be used to "erase" a number incorrectly keyed, if used before striking an operational key, without interrupting chain calculations. Display returns to "0.", or "L 0." if any quantity remains in memory.
- May be used after depressing the **M** key to clear memory contents. Does not affect display. (Display may be cleared by depressing **C/M** a second time.) Examples of clearing are shown on Page 25.

R/S Instructs the calculator to "recall" and display the contents of memory. If used immediately after M, the displayed number will replace the contents of memory.

NUMERIC AND SYMBOL DISPLAYS

Your calculator displays up to 8 digits with the decimal point in any of 8 places. A ninth (leftmost) position is used to display a calculation OVERFLOW (positive or negative) condition, a MEMORY IN USE indication or a negative sign of an 8 digit number.

⌐ This symbol indicates a calculation was attempted which resulted in a positive OVERFLOW or answer exceeding the calculator's capacity. Clear by depressing C/M .

□ This symbol indicates a calculation was attemped which resulted in a negative OVERFLOW or answer exceeding the calculator's capacity. Clear by depressing C/M .

└ This symbol indicates that the memory is "in use"; that is, a number has been stored in the memory. Clear memory by depressing M , C/M . Display is not affected.

— This symbol indicates a negative number. Symbol "floats," i.e., appears to the immediate left of the negative number.

NOTE: Combinations of these symbols can occur and are valid (i.e., ⌐□ , □□ , □—).

FLOATING DECIMAL

Your calculator is equipped with full floating decimal capabilities and will carry results of calculations to the maximum number of places (decimal points) required by the answer, within the 8-digit capacity. It does not round off fractions to the nearest number, but rather truncates them. For example, 100 ÷ 6 would display 16.666666 rather than 16.666667.

CONSTANT FEATURE

An automatic built-in constant allows you to use a constant factor in addition, subtraction, multiplication, division, and percentage calculations. (See Page 13.)

RECIPROCALS

Another feature of this calculator is its ability to obtain reciprocals ($1/x$). Enter the number, depress the 1/x key, and depress the = key twice. (See Page 10.)

POWERS

Powers of whole numbers may be obtained by entering the number, depressing the X key, and then the = key. The calculator will now display the square or second power of the number entered. Successive powers are obtained by continuing to depress the = key. The exponent may be a positive or negative whole number. (See Page 15.)

SIMPLICITY OF ENTRY

Entering problems is very simple: enter the problem as you write it: e.g., 4 − 2 =. You do not need to enter insignificant zeros; and the calculator does not display trailing zeros in results.

MEMORY USE

The memory mode has the same capacity as the calculator mode: i.e., 8 digits and one symbol. (See Page 6 for symbols.)

To perform operations within the memory, you "shift" to Memory by first depressing the M key. Depressing the M key instructs the calculator that the next function is to be performed in the memory. (Subsequent operations will be in the normal calculator mode unless the M key is again depressed.) Operations within the memory include addition, subtraction, storing, and clearing. Besides these operations, division and multiplication can be performed by "calling up" the memory contents. See "RECALL."

STORING: To store the displayed number, depress M and R/S in that sequence. A number may be stored

at any time during a sequence of calculations without disturbing the calculation underway. Note that this will automatically "erase" any previous contents of the memory.

ADDING TO MEMORY: The number displayed is added to the memory contents by depressing M and +/M in sequence.

SUBTRACTING FROM MEMORY: The number displayed is subtracted from the memory contents by depressing M and −/M in that order.

CLEARING MEMORY: Contents of memory are cleared by depressing M and C/M in that sequence. This will turn off the "L" or "memory-in-use" symbol, and clear the contents of the memory. It will **not** affect any calculation in process or any number displayed; therefore, if the memory contents are on display, these figures will remain on display, i.e., act as a keyboard entry in the calculator mode. Depressing C/M again will return display to "0."

"RECALL" FROM MEMORY: The R/S (Recall/Store) key can be used at any time to recall and display the contents of the memory. Since any calculator function can then be applied to the displayed entry, depressing the R/S key can thus allow the memory contents to be used as "keyboard" entry.

This feature allows a great versatility of calculations. The memory contents can be recalled and used in any calculation (e.g., a dividend in division) without changing the memory content. The results of such calculations can then be added to or subtracted from the original memory contents. Or a new result may be used to replace the previous memory contents.

SAMPLE CALCULATIONS

	ENTRY	DISPLAY
ADDITION		
73.50 + 5.14 =	C/M	0.
	73.5	73.5
Not necessary to enter	+/M	73.5
insignificant zeros	5.14	5.14
	=	78.64
SUBTRACTION		
56.0 − 21.37 =	C/M	0.
	56	56.
Illustrates full floating	−/M	56.
decimal capability	21.37	21.37
	=	34.63
MULTIPLICATION		
(1) 704.5 × 6.2 =	C/M	0.
	704.5	704.5
Insignificant zeros in result not	×	704.5
displayed	6.2	6.2
	=	4367.9
(2) 5.5 × (−7.2) =	C/M	0.
	5.5	5.5
	×	5.5
	−/M	5.5
	7.2	7.2
	=	−39.6
DIVISION		
(1) 100 ÷ 6 =	C/M	0.
	100	100.
	÷	100.
	6	6.
	=	16.666666
(2) 100 ÷ (−6) =	C/M	0.
	100	100.
	÷	100.
	−/M	100.
	6	6.
	=	−16.666666

	ENTRY	DISPLAY
(3) −100 ÷ 6 =	C/M	0.
	−/M	0.
	100	100.
	÷	−100.
	6	6.
	=	−16.666666

RECIPROCAL

(1) 1/5 or 1 ÷ 5 =	C/M	0.
	5	5.
	÷	5.
	=	1.
	=	0.2

(2) 1/0.85 or 1 ÷ 0.85	C/M	0.
	.85	0.85
	÷	0.85
	=	1.
	=	1.1764705

MIXED OR CHAIN CALCULATIONS

$$\frac{(1.5 \times 4) + 3}{6} - 7.4 =$$

	C/M	0.
	1.5	1.5
	×	1.5
	4	4.
(÷/M terminates the 1.5 × 4 calculation)	÷/M	6.
	3	3.
(÷ key terminates previous addition)	÷	9.
	6	6.
	−/M	1.5
	7.4	7.4
	=	−5.9

	ENTRY	DISPLAY
n-FACTORIAL		
9!	C/M	0.
	1	1.
	×	1.
	2	2.
	×	2.
	3	3.
	×	6.
	4	4.
	×	24.
	5	5.
	×	120.
	6	6.
	×	720.
	7	7.
	×	5040.
	8	8.
	×	40320.
	9	9.
Result = Factorial 9	×	362880.
UNIT PRICING		
Compare 50 oz. @ .79	C/M	0.
or 75 oz. @ 1.14	.79	0.79
	÷	0.79
	50	50.
(Cost per oz.)	=	0.0158
	C/M	0.
	1.14	1.14
	÷	1.14
	75	75.
(Cost per oz.)	=	0.0152
PERCENTAGE		
(1) Determine percentage	C/M	0.
200.00 Base	200	200.
× 15% Percentage rate	×	200.
Percentage	15	15.
(% acts as equals key)	%	30.
(2) Discount: Determine net amount after discount	C/M	0.
	200	200.
200.00 Base	−/M	200.
− 10% Discount	10	10.
(Discount)	%	20.
(Total Cost)	=	180.

	ENTRY	DISPLAY
(3) Mark-up: Gross profit is a mark-up of base case (Base + Percentage Rate)	C/M	0.
	200	200.
200.00 Base	+ /M	200.
+ 15% Percentage Rate	15	15.
Total amount	%	30.
($ Mark-up)	=	230.
(Total Cost)		
(4) On a base price of $200.00, the gross profit desired is 10% of the selling price; therefore cost is equal to 90% of selling price.	C/M	0.
	200	200.
	÷	200.
	90	90.
200 = 90% (x)	%	222.22222
then $x = \frac{200}{90\%}$		
Where x = Selling Price		
(= $222.22)		
(5) Finding percentage rate	C/M	0.
40 is equal to what percent of 200?	40	40.
	÷	40.
40 ÷ 200 = x%	200	200.
(20%)	%	20.
(6) Mixed percentage	C/M	0.
400 items at $25.00 each less	400	400.
20% discount (before duty) plus	×	400.
15% import duty = total cost	25	25.
	−/M	10000.
	20	20.
($ Discount)	%	2000.
($ Before Duty)	+/M	8000.
	15	15.
($ Duty)	%	1200.
(Total Cost)	=	9200.

AUTOMATIC CONSTANT FUNCTIONS

(1) Addend: Enter constant number first

EX: 125 +25 | 250 +25 | 212 +25

ENTRY	DISPLAY
C/M	0.
25	25.
+ /M	25.
125	125.
=	150.
250	250.
=	275.
212	212.
=	237.

(2) Minuend: Enter constant number first

EX. 100 −25 | 100 −36 | 100 −80

ENTRY	DISPLAY
C/M	0.
100	100.
− /M	100.
25	25.
=	75.
36	36.
=	64.
80	80.
=	20.

(3) Subtrahend: Enter function first, constant number next

EX: 125 −25 | 250 −25

ENTRY	DISPLAY
C/M	0.
− /M	0.
25	25.
+ /M	−25.
125	125.
=	100.
250	250.
=	225.

(4) Divisor

$\frac{6}{3}$ $\frac{156}{3}$ $\frac{918}{3}$

(2nd entry in division is constant)

ENTRY	DISPLAY
C/M	0.
6	6.
÷	6.
3	3.
=	2.
156	156.
=	52.
918	918.
=	306.

Constant Dividend: See page 19.

	ENTRY	DISPLAY
(5) Multiplier: Enter constant number first		
EX: 100 × 2.5 =	C/M	0.
	2.5	2.5
	×	2.5
125 × 2.5 =	100	100.
	=	250.
	125	125.
	=	312.5
(205 × 2.5) × 3 =	205	205.
	=	512.5
× key updates constant factor	×	512.5
	3	3.
	=	1537.5
(6) Percentage Rate		
20% of 150	C/M	0.
20% of 200	20	20.
20% of 300	%	0.20
	×	0.20
Enter constant number first	150	150.
	=	30.
	200	200.
	=	40.
	300	300.
	=	60.
(7) Percentage Base		
10% of 200 =	C/M	0.
15% of 200 =	200	200.
40% of 200 =	×	200.
	10	10.
Enter constant number first	%	20.
	15	15.
	%	30.
	40	40.
	%	80.

POWERS

		ENTRY	DISPLAY
(1) 16^0		C/M	0.
		16	16.
	First Power	×	16.
	Second Power	=	256.
	Third Power	=	4096.
	Fourth Power	=	65536.
	Fifth Power	=	1048576.
	Sixth Power	=	16777216.
	Overflow	=	⌐ 2.0843545
(2) 2^{-3}		C/M	0.
Problem may		2	2.
be written	First Power	×	2.
	Second Power	=	4.
$\frac{1}{2^3}$	Third Power	=	8.
		÷	8.
		=	1.
		=	0.125
(3) -2^7		C/M	0.
		−/M	0.
		2.	2.
	First Power	×	−2.
	Second Power	=	4.
	Third Power	=	−8.
	Fourth Power	=	16.
(Note correct	Fifth Power	=	−32.
algebraic	Sixth Power	=	64.
Signs)	Seventh Power	=	−128.

OPERATIONS IN MEMORY

NOTE: Always clear memory before beginning new calculations requiring memory use. To insure that both calculator and memory have been cleared of previous contents or instructions, depress **C/M**, **M**, and **C/M** in that sequence.

	ENTRY		DISPLAY
ADDING IN MEMORY			
	C/M		*
	M		*
Store the total of	C/M		0.
54 + 32 + 64 + 98	54		54.
	M		54.
	R/S	L	54.
	32	L	32.
	M	L	32.
	+/M	L	32.
	64	L	64.
	M	L	64.
	+/M	L	64.
	98	L	98.
	M	L	98.
	+/M	L	98.
(Recalls total)	R/S	L	248.
SUBTRACTING IN MEMORY			
Store: 154 − 35	C/M		*
	M		*
	C/M		0.
	154		154.
	M		154.
	R/S	L	154.
	35	L	35.
	M	L	35.
	−/M	L	35.
	R/S	L	119.

(See page 24 for examples of dual calculations)

* Depends on previous operation

	ENTRY		DISPLAY
CUMULATIVE % TOTALS	C/M		*
	M		*
150 × 15%	C/M		0.
+200 × 10%	150		150.
+100 × 20%	×		150.
	15		15.
	%		22.5
	M		22.5
	R/S	L	22.5
	200	L	200.
	×	L	200.
	10	L	10.
	%	L	20.
	M	L	20.
	+/M	L	20.
	100	L	100.
	×	L	100.
	20	L	20.
	%	L	20.
	M	L	20.
	+/M	L	20.
	R/S	L	62.5
FORMULAE WITH CONSTANTS			
	C/M		*
	M		*
Solve $=r^2$ for r = 3,	C/M		0.
r = 4, etc.	3.1416		3.1416
	M		3.1416
(Store constant in memory)	R/S	L	3.1416
	3	L	3.
	×	L	3.
(= 3^2)	=	L	9.
	×	L	9.
(Recalls π for multiplication)	R/S	L	3.1416
	=	L	28.2744
	4	L	4.
	×	L	4.
(= 4^2)	=	L	16.
	×	L	16.
	R/S	L	3.1416
	=	L	50.2656

* Depends on previous operation

DIFFERENCE OF PRODUCTS

$(12 \times 32) - (8 \times 16) = ?$

ENTRY		DISPLAY
C/M		*
M		*
C/M		*
12		12.
×		12.
32		32.
=		384.
M		384.
R/S	L	384.
8	L	8.
×	L	8.
16	L	16.
=	L	128.
M	L	128.
−/M	L	128.
R/S	L	256.

HOMEWORK

Prove solution of:

$$\frac{4x + 3}{6} - \frac{x - 9}{4} = 5$$

for $x = 5.4$

$$\frac{4\,(5.4) + 3}{6} - \frac{5.4 - 9}{4}$$

C/M		*
M		*
C/M		0.
4		4.
×		4.
5.4		5.4
=		21.6
+/M		21.6
3		3.0
÷		24.6
6		6.
=		4.1
M		4.1
R/S	L	4.1
5.4	L	5.4
−/M	L	5.4
9	L	9.
÷	L	−3.6
4	L	4.
=	L	−0.9
M	L	−0.9
−/M	L	−0.9
R/S	L	5.

(Answer has correct sign)

* Depends on previous operation

		ENTRY		DISPLAY
CONSTANT DIVIDEND				
		C/M		*
256 256 256		M		*
64 8 32		C/M		0.
		256		256.
		M		256.
	(Store constant)	R/S	L	256.
		÷	L	256.
		64	L	64.
		=	L	4.
	(Recall memory)	R/S	L	256.
		÷	L	256.
		8	L	8.
		=	L	32.
		R/S	L	256.
		÷	L	256.
		32	L	32.
		=	L	8.
ACCUMULATED CONSTANTS				
		C/M		*
		M		*
		C/M		0.
20% of 150		20		20.
+20% of 200		%		0.20
+20% of 300		×		0.20
		150		150.
		=		30.
	Store first product	M		30.
		R/S	L	30.
		200	L	200.
		=	L	40.
	Add second product	M	L	40.
		+/M	L	40.
	(Optional Step)	R/S	L	70.
		300	L	300.
		=	L	60.
		M	L	60.
	Add third product	+/M	L	60.
		R/S	L	130.

* Depends on previous operation

CUMULATIVE PRODUCTS
(e.g., Inventory)

15 @ 39¢
25 @ 1.09
32 @ 42.50
10 @ 16.25

	ENTRY		DISPLAY
	C/M		*
	M		*
	C/M		0.
	15		15.
	×		15.
	.39		0.39
	=		5.85
Store 1st product	M		5.85
	R/S	L	5.85
	25	L	25.
	×	L	25.
	1.09	L	1.09
	=	L	27.25
Add 2nd product	M	L	27.25
	+/M	L	27.25
	32	L	32.
	×	L	32.
	42.5	L	42.5
	=	L	1360.
Add 3rd product	M	L	1360.
	+/M	L	1360.
	10	L	10.
	×	L	10.
	16.25	L	16.25
Insignificant zeros not displayed; = 162.50	=	L	162.5
	M	L	162.5
Add 4th product	+/M	L	162.5
"Read" total	R/S	L	1555.6

* Depends on previous operation

	ENTRY		DISPLAY
GRADING STUDENTS			
	C/M		*
Semester grade:	M		*
75% of average interim grades	C/M		0.
+ 25% of final exam	60		60.
Interim grades: 60, 75, 75, 70,	+/M		60.
Final exam: 90	75		75.
	+/M		135.
	75		75.
	+/M		210.
	70		70.
	÷		280.
	4		4.
	=		70.
	×		70.
	75		75.
	%		52.5
	M		52.5
	R/S	L	52.5
	90	L	90.
	×	L	90.
	25	L	25.
	%	L	22.5
	M	L	22.5
	+/M	L	22.5
= Semester Grade	R/S	L	75.
REDUCTION OF FRACTIONS -	C/M		*
$\frac{72 \times 9}{3 \times 6}$	M		*
	C/M		0.
	3		3.
	×		3.
(Calculate denominator first)	6		6.
	=		18.
	M		18.
	R/S	L	18.
(No need to clear display	72	L	72.
for new calculation)	×	L	72.
	9	L	9.
	÷	L	648.
	R/S	L	18.
	=	L	36.

* Depends on previous operation

		ENTRY		DISPLAY
CONVERSION: OZ or GRAM				
Store constant 28.349 (=1 oz.) in memory		C/M		*
		M		*
		C/M		0.
		28.349		28.349
		M		28.349
		R/S	L	28.349
Convert 100 g. to oz.		100	L	100.
(oz. = g. ÷ 28.349)		÷	L	100.
		R/S	L	28.349
	oz.	=	L	3.5274612
Convert 16 oz. to grams		16	L	16.
(g = oz. x 28.349)		×	L	16.
		R/S	L	28.349
	grams	=	L	453.584
TEMPERATURE CONVERSION, °C or °F				
For simple conversion of °C to °F or the reverse, store the constant 1.8 in the memory.		C/M		*
		M		*
		C/M		0.
		1.8		1.8
		M		1.8
°C to °F: Multiply °C by constant and add 32.		R/S	L	1.8
		×	L	1.8
25°C = ?°F		25	L	25.
(°F = 1.8 x °C + 32)		+/M	L	45.
		32	L	32.
		=	L	77.
°F to °C: Subtract 32 from °F and divide by 1.8 (stored constant)		C/M	L	0†
		68	L	68.
68°F = ? °C		−/M	L	68.
(°C = °F −32 ÷ 1.8)		32	L	32.
		÷	L	36.
		R/S	L	1.8
		=	L	20.

* Depends on previous operation
† Assumes 1.8 is stored in memory

		ENTRY		DISPLAY
METRIC CONVERSIONS (inches or mm)				
Store constant .03937 (=1mm) in memory		C/M		*
		M		*
		C/M		0.
		.03937		0.03937
		M		0.03937
		R/S	L	0.03937
Convert 250 mm to inches (in. = 0.03937 × mm)		250	L	250.
		×	L	250.
		R/S	L	0.03937
	in.	=	L	9.8425
Convert 16 in. to mm (mm = in. ÷ 0.03937)		16	L	16.
		÷	L	16.
		R/S	L	0.03937
Convert result to cm †	mm	=	L	406.40081
(cm = mm ÷ 10)		÷	L	406.40081
		10	L	10.
	cm	=	L	40.640081
Convert new result to meters		÷	L	40.640081
(m = cm ÷ 100)		100	L	100.
	m	=	L	0.4064008
(Feet or cm)		C/M		*
		M		*
		C/M		0.
Store the constant 30.48 (1 foot) in memory		30.48		30.48
		M		30.48
		R/S	L	30.48
2 1/2 foot = ? cm		2.5	L	2.5
(cm = 30.48 × ft.)		×	L	2.5
		R/S	L	30.48
	cm	=	L	76.2
80 cm = ? Feet		80	L	80.
(ft. = cm ÷ 30.48)		÷	L	80.
		R/S	L	30.48
	ft.	=	L	2.6246719

* Depends on previous operation

† If desired to convert to meters @ this stage divide by 1000

DUAL CALCULATIONS

The memory feature of this calculator allows you to carry two separate totals, perform additional calculations, and add the results. An example is a shopping list containing taxable and non-taxable items. You can store the non-taxable items in the memory, total the taxable items in the calculator, compute and add the tax, and determine the final total. In the example shown the right column explains the operations occurring within the unit.

SHOPPING LIST

0.99 taxable
0.95 non-taxable
1.20 non-taxable
1.41 taxable
Total + tax = ?

ENTRY		DISPLAY	OPERATIONS OCCURRING
C/M		0.	
.99		0.99	
+ /M		0.99	0.99 added in calculator
.95		0.95	
M		0.95	Memory addressed
+ /M	L	0.95	0.95 added in memory
1.20	L	1.20	
M	L	1.20	Memory addressed
+ /M	L	1.20	1.20 added in memory
1.41	L	1.41	
+ /M	L	2.4	Completes calculation of taxable total; prepares for addition of tax
5	L	5.	
%	L	0.12	Computes 5%
=	L	2.52	Adds tax
+ /M	L	2.52	Prepares for addition
R/S	L	2.15	Recalls non-taxable total
=	L	4.67	Grand total

	ENTRY		DISPLAY
USE OF C/M KEY			
Incorrect entry in problem such as	3		3.
3 × 4 + 3	×		3.
	4		4.
	+/M		12.
(Wrong entry!)	6		6.
	C/M		0.
(Correct entry is accepted;	3		3.
chain not affected.)	=		15.
Cancelling operation instructions.			
(Clears calculator)			
3 × 4	3.		3.
	—/M		3.
(Re-enter problem)	C/M		0.
Clearing Memory			
L indicates a value is			
stored in memory		L	Any
	M	L	Unchanged
"L" goes off	C/M		Unchanged
(Any remaining display may			
be cleared by R/S or C/M)			
MISOPERATIONS			
12345678	C/M		0.
× 9	12345678		12345678.
	×		12345678.
	9		9.
Overflow (positive)**	=	⌐	1.1111110
88888888	C/M		0.
+66666666	88888888		88888888.
	M		88888888.
	R/S	L	88888888.
Memory positive overflow	66666666	L	66666666.
(Clear calculator)	M	L	66666666.
	+/M	⌐	66666666.
−88888888	C/M		0.
−66666666	−/M		0.
	88888888		88888888.
	−/M		−88888888.
	66666666		66666666.
Overflow (negative)**	=	▭	1.5555555

**Answer × 10^8 is approximately correct: mentally "move" decimal 8 places to right.

MAINTAINING CALCULATOR

Cleaning: Case may be cleaned with alcohol. Display window may be cleaned with glass cleaner.

Storage: Unit should not be exposed for any prolonged period to temperatures below −40°F or above 150°F (these temperatures might be encountered in a closed automobile, for example).

TROUBLE SHOOTING

If a problem occurs, verify that the power switch is "ON" (slide switch pushed toward AC Adaptor — see Fig. 1).

Symptom	Power Source	Remedy
No Display	Battery	Check or replace batteries; observe correct polarity
Weak Display	Battery	Check or replace batteries; observe correct polarity
No Display	AC	Check that AC/DC adaptor is plugged into a proper outlet
Display Lit But Result incorrect	Either	Review operating instructions

If the remedies suggested do not cure the problem, refer to your service certificate for instructions.

NOTE: Batteries are not guaranteed by the calculator manufacturer. Also note that "AA" type batteries *must not be returned* if unit is returned for servicing.

POWER

An AC adaptor is supplied with 0321 models for your hand-held calculator from a standard 115 VAC wall outlet.
(AC adaptor is not included in 0320 models but may be ordered separately.)
Batteries will have a longer life if you turn off calculator when not in use and if you will "clear" the calculator with the C/M after obtaining calculation results.

TO REPLACE BATTERIES (Models 0320 and 0321)

Your unit is shipped with four "AA" batteries. They are readily accessible by removing the battery cover on the bottom of the calculator case. Push the battery latch cover in the direction away from the label on the back of the case, and remove the cover. Remove old batteries and replace new ones according to the battery outline in the battery compartment. This will insure correct polarity of batteries. *Failure to properly install the batteries will result in failure of the calculator to operate.*

Batteries which may be used in your calculator include but are not necessarily limited to the following:

Company	Carbon Zinc	Alkaline
Eveready	815, 915,1015	E-91
Mallory	M15R	MN-1500, SA15AA
Panasonic	UM-3, UM-3D, UM-3N	AM-3
Ray-O-Vac	5AA. 7AA	815

IF YOUR UNIT IS EQUIPPED WITH NICKEL-CADMIUM BATTERIES (MODEL 0322)

Owners of units powered by nickel-cadmium batteries should observe the following precautions:

(1) Never operate unit more than 12 hours without re-charging. (If unit is operated for longer periods, battery life may be reduced.)

(2) Recharge batteries for 12 hours, using charger supplied with unit.
   (a) Turn calculator to OFF position
   (b) Plug charger cord into calculator and the charger into any convenient AC outlet

NOTE: The unit can be operated while the charge is "plugged in" to an AC outlet, but this will disconnect the charging circuit and charging will not occur during calculator operation. The unit is protected against accidental overcharge of batteries.

(3) Nickel-Cadmium Battery Replacement
Replacement should be performed only by an authorized service center. (See Service Certificate.)

GLOSSARY

ARITHMETIC TERMS

I. Subtraction	Minuend	100
	Subtrahend	−25
	Result (Difference)	75
II. Multiplication	Multiplicand (1st factor)	25
	Multiplier (2nd factor)	× 6
	Result (Product)	150
III. Division	Dividend	150
	Divisor	÷ 6
	Result (Quotient)	25
IV. Addition	Augend	100
	Addend	+25
	Result (Sum)	125

OTHER COMMON TERMS

Constant: A quantity or factor in a calculation that remains the same in a series of similar calculations.

Factorial (n!): The product of a series of consecutive whole numbers from 1 to n.

Percent: From Latin "Per Centum." ("For each hundred") Symbolized by "%". Thus 7% means 7 parts of 100 parts or 0.07 (7/100) of the whole.
The percent key % on your calculator computes percentages, percentage rates and percent bases automatically, including proper placement of the decimal point.

Square and power: The square of a number is the result of that number multiplied by itself or the "second power", for example $12 \times 12 = (12^2) = 144$. Your calculator can automatically perform the squaring function or raise to higher powers, e.g. 3^3 or 3^5 (see page 15 for examples).

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