

IMPORTANT

Fill out Warranty Registration and return to Melcor within 10 days of purchase to validate warranty.

Introduction

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Your new mini-calculator is the most advanced electronic instrument of its type available today. Incorporating the latest technological advancements, it contains several patent pending design features.

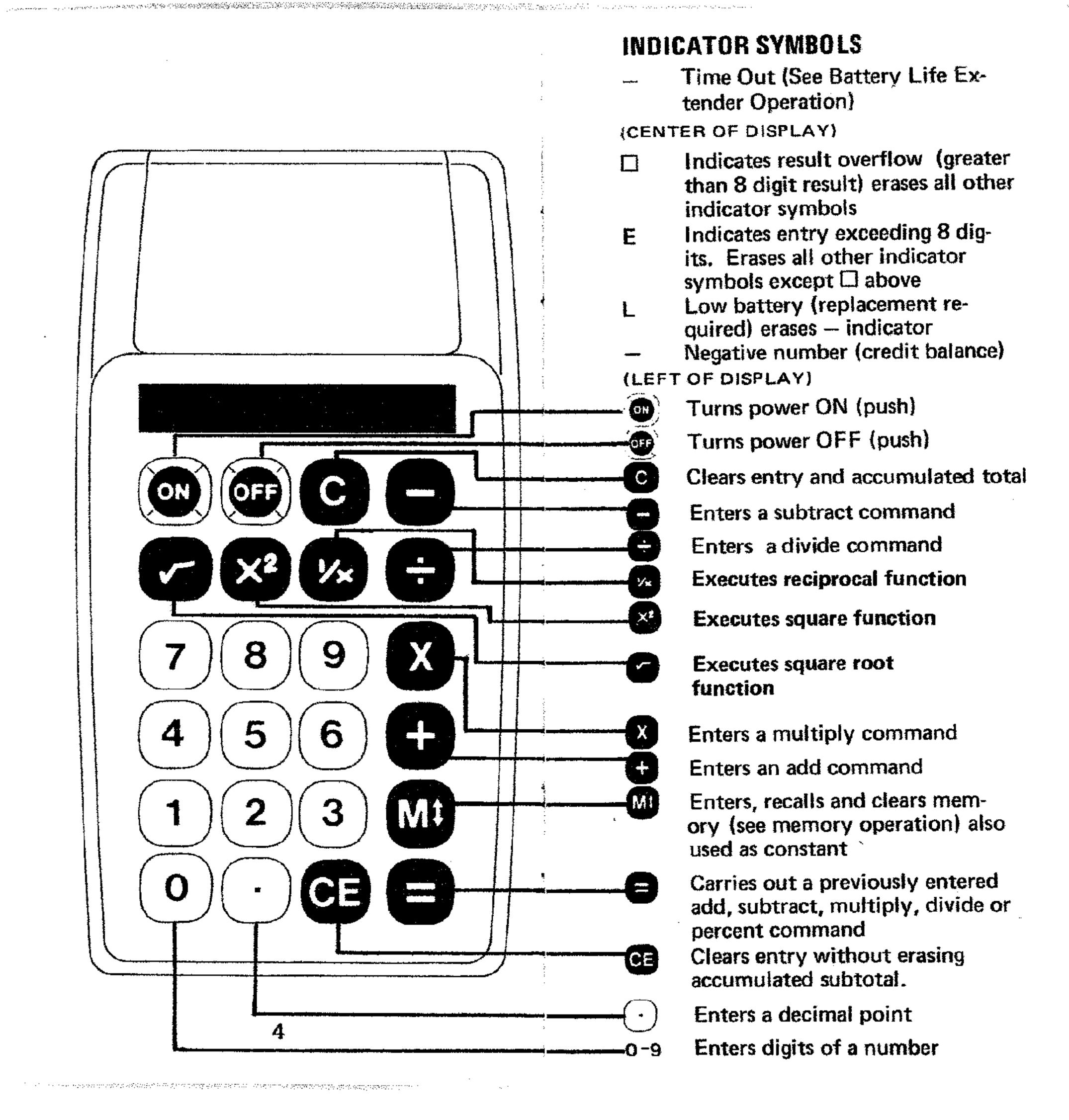
Your new calculator was carefully engineered to make it simple and easy to use. We suggest you read the step by step instructions on the following pages and actually perform the calculations to familiarize yourself with the calculator. Condensed instructions are also printed on the back of your calculator. A few helpful hints before we proceed:

- 1. Always turn the calculator off when not in use to conserve the battery. Simply push the off key so that no display appears.
- 2. Never place calculator on a radiator or other surface too hot to touch with the hand. This may damage calculator and will void the warranty.

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Battery and AC Operation

AC AND BATTERY OPERATION

AC OPERATION

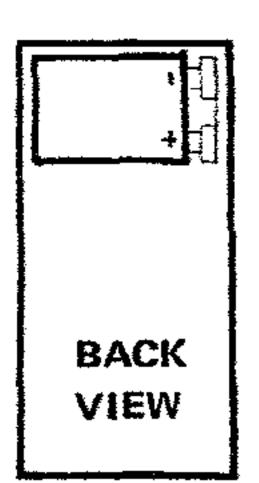
Push off button. Plug adapter into calculator first, then into a 120 volt 60 Hz. AC outlet. Push outlon. (The internal battery is automatically disconnected in AC operation).

BATTERY OPERATION

Disconnect adapter from outlet, then from calculator. Push button. (If adapter is left connected, a switch prevents battery operation). In normal service a fresh alkaline battery will last about 1 month.

BATTERY REPLACEMENT

Push power button of Exerting slight upward pressure on battery compartment cover (on back of calculator), slide cover off compartment and slap against palm to remove battery.



Install battery, observing proper polarity, and replace cover

CONTROL OF THE PROPERTY OF THE

Note:

Use only Mallory MN-1604 alkaline battery. Other batteries will not yield satisfactory performance.

<u>ہ</u>

BATTERY LIFE EXTENDER OPERATION

If no key is pressed for about 30 seconds, the display blanks out to conserve the battery and a single dash appears in the center to indicate that the calculator is still "ON". The display may be recalled as follows:

- 1) If display blanks out while you are entering a number or operation, just continue entering. The display will be automatically restored.
- 2) If display blanks out between the entering of numbers or operations, the Key will restore the display without entering any additional numbers or operations.

For longest battery life, push key when calculator is not in use.

CORRECTION OF ENTRY ERRORS

Your calculator provides a CLEAR ENTRY (CE) Key to enable you to correct entry errors without erasing the accumulated total.

CE only clears numbers, not function keys.

$$2+4+6+15=27$$

Enter		Display
2, 😝 ,4, 😝 ,6, 😝	}	12.
2 (ERROR)		2.
GE .		0.
1,5		15.
	7	27.

EXCESS ENTRY

If more than 8 digits are entered the symbol E will appear at the left of the display to denote excess entry. Press the CLEAR ENTRY (CE) Key to clear symbol and entry without disturbing accumulated total. Round off number to 8 or fewer significant digits preceding decimal point and reenter.

Company of the Compan

To round off a number to 8 places preceding decimal point:

- 1) If ninth digit is 4 or less, enter first 8 digits.
- 2) If ninth digit is 5 or greater, increase eighth digit by 1 and enter.

909876424	ĨS	90987642.
909876425	entered as	90987643.

UNDERFLOW

If the result of a division is less than 0.000001 it will show as 0.

ERROR FREE ENTRY

Your calculator permits faster error free entry by allowing 2 keys to be pressed at the same time without causing error. If a second key is pressed while the first key is held, then released before or after the first key is released, the second key is ignored. An abnormal display may be present while 2 keys are depressed.

RESULT OVERFLOW

Your calculator protects you against inadvertently exceeding its calculation capac-

8

ity by lighting an overflow symbol at the left side of the display (\Box) and preventing further calculation until (\Box) symbol is cleared.

 Press the CLEAR (C) Key. The calculator and the overflow symbol will clear. Fixed point and memory will not clear.

ZERO SUPPRESSION

With the exception of a single zero preceding the decimal point in the case of a decimal, insignificant zeroes (leading and trailing) are suppressed, except where trailing zeroes are required in the fixed point mode. An insignificant zero is one whose presence or absence does not determine the value of a number.

$0.25 \times 0.972 = 0.24300$

Enter	Display
C	0.
\odot	0.
2	0.2
5	0.25
X	0.25
\odot	O.
9	0.9
7	0.97
2	0.972
	0.243
	1.7

AUTOMATIC CLEAR

In most situations, your calculator is designed to clear automatically, eliminating the necessity to press the C key. Automatic clear occurs:

Light of the control of the control

- 1) Upon power turn on
- 2) Upon entering a number (0-9) immediately following the pressing of the key.
- 3) Upon entering fixed decimal point mode as discussed under "Fixed Point Operation"

When a new problem begins with or it is necessary to press c before starting the problem. Clearing memory is discussed under "Memory Operation".

FIXED POINT (0-7 PLACES)

When you first turn on power, your calculator will operate in a floating point mode and the decimal point of a displayed result will be automatically positioned. In certain situations, for example when working in dollars and cents, it is more convenient to display the result automatically rounded off to a fixed number of decimal places. This is entered from the keyboard as follows:

• , # of places desired (0,1,2,3,4,5, 6 or 7)

EXAMPLE:

2 x \$19.95 = 39.9 (Floating Point Mode) = 39.90 (2 Place Fixed)

Enter

Display

· , **(1)** ,2



., 0,1,9, (),9,5,

39.90

Notes:

- 1) Fixed point storage is not affected by the clear key and need only be entered once each time the machine is turned on.
- 2) It is not necessary to clear before or after fixed point entry. However, since fixed point entry generates an automatic clear, it should not be performed during a problem.
- 3) Fixed point entry does not clear memory or affect the number of decimal places of a number stored in memory.
 - 4) A new value of fixed point may be entered at any time using the above key sequence. The previous stored value of

- fixed point will be automatically erased.

 5) To return from fixed point to a floating point mode, press key, then
 - point mode, press key, then key. An automatic power on clear will be generated.

The second secon

- 6) Only the final result of a problem obtained after depressing key will be presented in fixed point. All entries and intermediate results of chain problems are always presented in floating point.
- 7) The table below lists certain situations in which fixed point result is generally preferable:

To Work in	Number of Places
Integers (Whole Numbers)	0
Dollars and Cents Thousandths or Mils	2
(1/10¢)	3

- 8) When the computed number of decimal places in the result exceeds the number of fixed decimal places that is stored in the machine, the answer is automatically rounded off to that number of places. The roundoff criterion is 5/4 as illustrated in the following examples:
 - A 2 + 1.506 = 3.506 To round to two decimal places, since the third place is five or greater, the number in the second place is increased by one, i.e. 3.51
 - B 2 + 1.504 = 3.504 Here the third place is less than five and the number in the second place is left as is, i.e. 3.50

PROBLEM SOLVING

ADDITION

2.375 + 0.4182 = 2.7932

Enter Display

2, ① ,3,7,5, ② , . , 4,1,8,2, ②

2.7932

(-4) + (-3) = -7

O. O. 4. O.

3 ,

- 7.

(-4) + 3 = -1

SUBTRACTION

2.375 - 0.068 = 2.307

Enter

2, (),3,7,5, (),

2, (·),3,7,5, (·),0,6,8, (**-**)

2.307

Display

(-7) - (-4) = -3

0,0,7,0,0,

4,

MULTIPLICATION

 $2.375 \times 6.8 = 16.15$

Enter

Display

2, (),3,7,5, (),6, (),

8,

16.15

 $-4 \times -3 = 12$

0.0,4.0.

3,

[°] 12.

 $-4 \times 3 = -12$

DIVISION

 $2.375 \div 5 = 0.475$

Enter

Display

2, (),3,7,5, (),5, ()

0.475

 $-9 \div 3 = -3$

9, **9**, **9**, **3**, **9**

 $-8 \div -2 = 4$

(C), (C), (S), (C), (C)

,2,

CHAIN & MIXED CALCULATIONS

5+4+3+2+6=20

Enter

TO THE RESIDENCE OF THE PROPERTY OF THE PROPER

Display

5, 3, 3, 3, 2,

6, **6**, **6**

20.

9-4-3=2

9, 6, 4, 6, 3, 6

 $5 \times 3 \times 6 \times 2 = 180$

5, 3, 3, 6, 3,2,

180.

(-3+4-13)12

G . G .3, G .4, G .1,3, W .1,2, G

,8, 🖨 ,7, 🖨

25.

FRACTIONS

A fraction is simply another way to express the division of one number (numerator) by another number (denominator). Your calculator performs operations involving fractions by first converting them to decimals.

> 3 (numerator) 4 (denominator)

Enter

Display

3, 😝 ,4, 😝

0.75

MEMORY OPERATION & STORED CONSTANT MEMORY OPERATION

Unlike most calculators which provide only stored constant, yours contains a separate memory storage register which dramatically increases its calculating power. It can be used as a storage memory to hold an answer for later use during a problem or during a later problem. It can be used to accumulate (add answers of a series of problems to obtain a total), as in extending a sales invoice, or it can be used as a stored constant. Memory operates using a single key for simplicity as follows:

- Following a depression of the key enters the number on the display into memory, if a number, not a function, was entered preceding depression of the key. (See memory example #9.)
- Pollowing a function key (, , , , , , , , , , , ,) or (2,) recalls the number stored in memory and performs the indicated operation. The number remains stored in memory.
- 3) Each time a number is entered into memory, the memory is automatically cleared of any number stored there in much the same manner that recording on a tape recorder automatically erases any previous recording on that tape.
- 4) Memory is automatically cleared each time your calculator is turned on.
- 5) Unlike a stored constant, memory does not enter into or affect a problem unless recalled by depressing

- lations are being performed which do not require the use of memory, it does not matter what is stored there. If calculations do require the use of memory, the autoclear feature explained in (3) and (4) above will insure the erasure of old memory storage. Since memory clearing is always automatic, no separate memory clear key is provided.
- 6) The C and C3 keys do not clear memory.
- 7) Entry of fixed decimal point storage does not clear or affect a number stored in memory in any way.
- 8) Negative numbers (credit balances) as well as positive numbers may be stored in memory.
- 9) Memory operates in all 7 functions, and as either the first or second factor in a problem (see problems below). Conventional stored constants are usually limited to being the first factor in multiplication and the second factor in division.
- 10) Memory accumulation is performed by adding (or subtracting) the recalled memory to the result of a calculation and then reentering this subtotal in memory. This process can be repeated indefinitely. See memory accumulation sample problems below and typical merchants sales invoice under "In Daily Life".

The result of a square root operation will replace the contents of the memory.

MEMORY SAMPLE PROBLEMS

1) $(3 \times 8) + (9 \times 7) = 87$ (2 Term Accumulation)

Enter Display 3, \$2, 8, \$\, \text{D} \, \text{D} \, \text{D} \, \text{9}, \text{S7.}

A CONTRACT OF THE SECOND CONTRACT OF THE SECO

 $\frac{4+20}{2+4} = 4$

Enter Display 2, 4, 6, 4, 4, 4.

3) Correction of sequence error in entering.

 $32.38 \div 16.19 = 2$

If 16.19 is inadvertently entered first, then proceed as follows:

4) MULTIPLE TERM ACCUMULATION (6x3)+(4x8)+25+(6.4x2.8)+[6x(-0.2)]=91.72Enter Display 6, **3** ,3, **3** , **3** 18, 32. 4, 🗱 ,8, 🔂 50. ,2,5 25. **75**. 17.92 6, 0, 4, 23, 2, 0, 8, 6 92.92 , **8** , **W** 6, 2 , 6 , . 2, 6 91.72 M 5) MEMORY USE AS STORED CONSTANT Display Enter 3, (),1,4,1,5,9, (), () 3.14159 **2**,2, **3** 6.28318 O, W, 3, 8 9.42477 9,42477 3, 🔂 M 0.9549304 1.0471966 M , 6 ,3, 6 6.14159 3, **6**), **6**) G, B, 3, B, M, B -6.14159(9, (M), (5),3, (5) 0.14159

9) Entering function without number prior to

Enter

Display

The state of the s

1, 3, 2, 3, 3, 6



To correctly enter into memory, proceed as follows:

0, 🖨 , 🐠



2, **3**, 3, **3**, 4, **3** (or **3**)



To correctly enter into memory, proceed as follows:

1, 🖨 , 🚳



Note: C3 will not clear function keys (C3, C3, C3).

SCIENTIFIC PROBLEMS

1) Square

A number in the display may be squared at any time by pushing the key.

Example: $5^2 = 25$

Enter

Display

5, X

25. se used as part

The square function may be used as part of a chain calculation.

Example $((3)^2 - 5)^2 = 16$

Enter

Display

3, 🔀 😑 , 5, 🔀

16.

2) Square Root

The square root of a number in the display may be determined at anytime by pushing the key

Example

2,5



The square root function may be used as a part of a chain calculation.

Example $\sqrt{((3)^2 - 5)} = 2$

Enter

3, 20, 5, 5

- 2

NOTE:

THE EXECUTION OF A SQUARE ROOT COMMAND WILL REPLACE THE CONTENTS OF THE MEMORY REGISTER.

3) Reciprocal

.

The reciprocal of a number in the display may be found at anytime by pushing the key.

Example

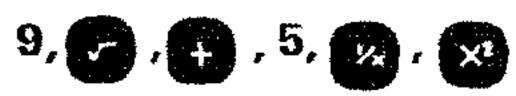
1/8 = .125

This feature may be used as part of a chain calculation.

Example

$$\left(\frac{1}{5+\sqrt{9}}\right)^2 = .015625$$

Enter



4) Raising to a power

SCIENTIFIC PROBLEMS

Example

 $1.56^{1.5} = 788.62211$

Enter

The Control of the Co

0.015625

Display



788.62211

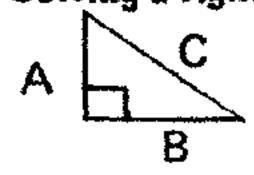
Example

 $1.56^8 = 35.07$

Enter

35.074927

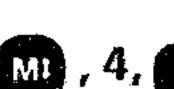
5) Solving a right triangle



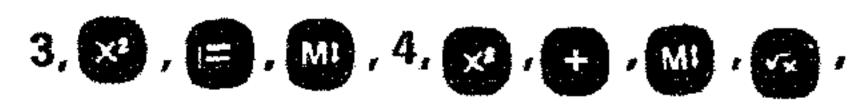
$$\sqrt{A^2 + B^2} = C$$

$$A = 3, B = 4, C = ?$$

Enter







6) Converting fractions to decimals

Enter

3.625

In Daily Life

MULTIPLE PURCHASE

(MEMORY ACCUMULATION)

2 Pairs of par	its @	\$19.95		39.90
3 Shirts	@	7.89		23.67
3 Ties	@	5.39		16.17
				79.74
	79	% Sales T	`ах	5.58
		Tota	l	\$85.32
Enter				Display
(-), (-), 2				
(If not alread	dy set)			0.
2, 🔞 ,1,9,(·) ,9,5	, 8 ,		
MI				39 .90
3, 🗱 ,7, 🕒	,8,9,			23.67
M , 8 ,	M ,			63.57
3, 🗱 ,5, 🕒	,3,9,		-	
•				16.17
M , 8,	MD ,			79.74
№ • • • • • • • • • • • • • • • • • • •	,7,	,		5.58
3 , 3 , (8	Í		85.32

SALES CREDIT BALANCE

If a number is subtracted from a smaller number, a minus sign (-) will appear at the left of the display to denote a negative result (credit balance).

Sales

Cost of Sales

(10148.00	Loss	
Enter		Display
. 2 (To set deci –	-	0.
mal at 2 places if not alrea		
8,0,7,2,8,		
9,0,8,7,6,		10148.00

GASOLINE MILEAGE

\$80728.00

90876.00

Fill gas tank and note odometer reading. Drive until fuel is required. Refill tank and subtract previously noted mileage from present mileage and divided by number of gallons used to fill tank.

34083,4	second odometer
	reading
-33907.0	first odometer
——————————————————————————————————————	reading
176.4	miles traveled
÷ 14.7	gallons used to
	fill tank
-	

12.0 miles/gallon

Enter 3,3,9,0,7,

1,4, ① ,7,

CONSUMER COST COMPARISON (UNIT PRICING)

Today's food and household items often come in odd sizes that defy easy cost comparison, but with the calculator it's easy. Simply divide the cost in cents by the unit (ounces, pounds, etc.) to get cents/unit. For example, which is the better buy, a 27 oz. bottle of floor wax at \$1.29, or a 32 oz. bottle at \$1.39?

Enter 1,2,9,	Display 4.78
(Stores answer for later comparison)	4.78
1,3,9, 3,2,	4.34
(Recalls earlier answer for	4.78

Obviously, the 32 oz. bottle at \$1.39 is the better buy.

quick comparson)

INCOME TAXES

1,820.00

You should breeze through federal, state, and local income tax forms in one evening. Your calculator easily handles every arithmetic computation. For example, a sample tax computation:

taxable income tax (from tables)	\$11,328 1,820
	,
	22%
of amount	in excess
of	10,000
\$11,328.00	
10,000.00	
1,328.00	
22%	
292.16	

2,112.16 total tax

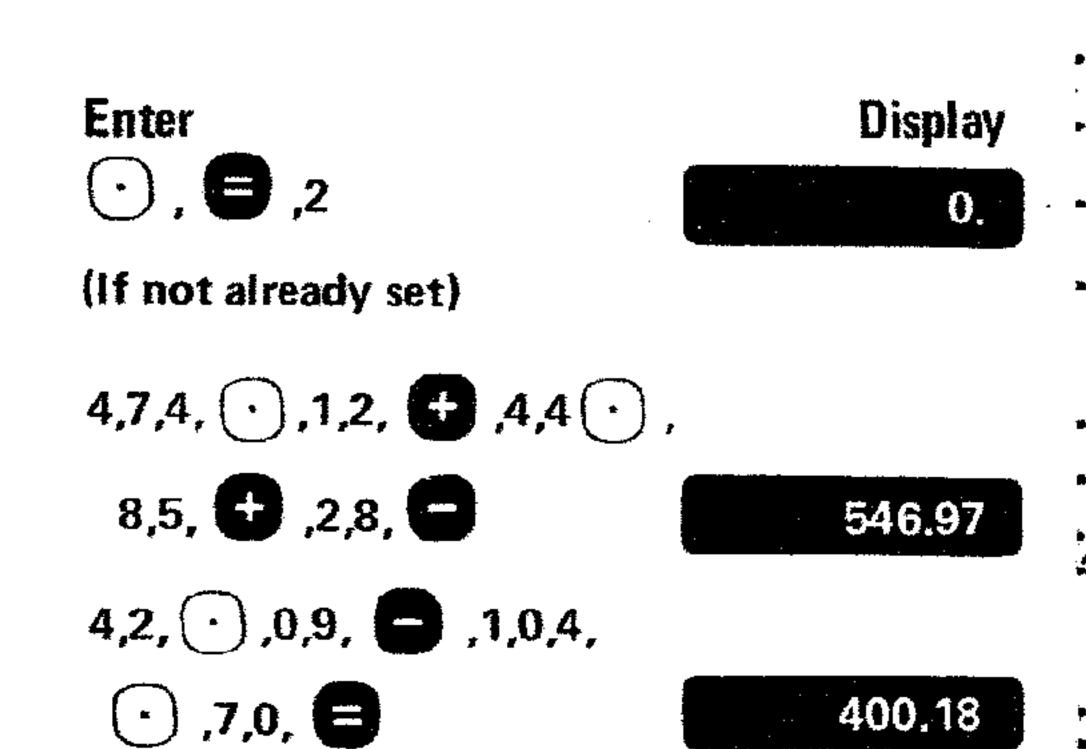
Enter Display

O. (If not already set)

BALANCING YOUR CHECKBOOK

Let your calculator fight the monthly checkbook balancing battle for you. Just add deposits made since your statement date to your statement balance, then subtract outstanding checks. Your checkbook balance should agree with the result:

Statement balance Deposits made since statement date	\$474.12 44.85 28.00 \$546.97
Checks outstanding	42.09 104.70
Total Checkbook balance	400.18 \$400.18



7 COMPOUND INTEREST \$2500 compounded at 5% per year for 5 years = \$3190.70 Display Enter **9**,2 (To set fixed point to 2 places If not already set) (·) (•) ,5, (•) ,1, (•) , (M) 1.05 2,5,0,0, X 3190.70 OR 1.05 (·) . 0 .5, (-) .1, (-) (<u>M</u>) 2,5,0,0, 3190.70 DEPRECIATION \$2500 depreciated by 5% per year for 5 years = Display Enter . 🖯 ,2 (To set fixed point to 2 places If not already set) 2,5,0,0, X 125.00 2,5,0,0,

1875.00

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PERFORMANCE SPECIFICATIONS ENTRY:

8 Digit. Digits enter display from right to left. Indicator in display for excess entry.

RESULT

Up to 8 digits for full accuracy. Indicator in display for result overflow. Result overflow stops calculation until calculator is cleared to prevent errors. Automatic underflow system prevents errors where results are less than 0.0000001.

DISPLAY:

Solid state 8 digits light emitting diode (LED) for ruggedness and long life. Display blanked during computation to eliminate annoying flashing of the false numbers.

BATTERY LIFE EXTENDER:

Automatic battery life extender turns off display 20-60 seconds after last key operation to conserve battery.

FUNCTIONS:

Addition, subtraction, multiplication, division, square, square root, reciprocal.

COMPUTATIONS PERFORMED:

Basic (2 number) problems in all four functions. Chain (3 or more numbers), mixed (2 or more functions) and chain/mixed (3 or more numbers and 2 or more functions) problems in all four functions. Problems involving negative numbers (credit balanced). Problems using memory and scientific functions as described below.

MEMORY

True algebraic memory stores negative or positive numbers. Single key performs entry, recall and clear. Can be used as storage memory, accumulator, or stored constant

SCIENTIFIC FUNCTIONS

Individual keys , and and for direct reciprocal, square, and square root.

DECIMAL POINT

Decimal point automatically positioned (floating mode). If more than one decimal point is entered for a given number, only the first decimal point is entered and the other disregarded.

A fixed decimal point mode is also provided which enables setting decimal point of result at 0,1,2,3,4,5,6, or 7 places. Fixed point is entered from keyboard and provides automatic 5/4 roundoff.

CLEAR (C):

Clears all previous operations and totals to zero to prepare calculator for next problem.

CLEAR ENTRY (CE):

Permits clearing an incorrect entry without erasing accumulated total.

KEYBOARD:

Full travel keyboard with finger contoured keys. Gold plated contacts for high reliability.

CREDIT BALANCE (negative numbers):

Negative sign indicator in display.

LOW BATTERY WARNING:

(L) appears in display to indicate low battery.

UNNECESSARY ZEROES:

Leading and trailing zeroes automatically suppressed.

POWER ON CLEAR:

Calculator clears automatically upon turning on power.

OPERATING TEMPERATURE:

+32° to + 167°F 0° to + 75°C

BATTERY REQUIRED:

9 volt alkaline - Mallory #MN-1604.

BATTERY LIFE:

Continuous use (average of 4 digits on) 7 hrs.

Above display blanked 50% of time 9 hrs.

AC OPERATION:

Calculator operates on 115 VAC, 60 Hz., using adapter supplied. Use of adapter automatically disconnects internal battery to conserve its life. (Opt. 220V adapter)

SIZE:

5-7/8" x 3" x 3/4" thick. (Shirt pocket size) WEIGHT:

5 oz. (less battery)

MELCOR ELECTRONICS COR 1750 New Highway Farmingdale, New York 11735

> Stamp Here