

WARRANTY

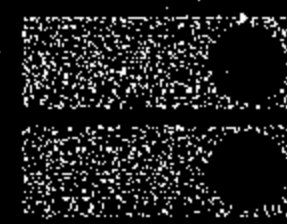
Bowmar/ALI, Inc. warrants to the purchaser of this new Bowmar Calculator that if the machine or any part thereof in the judgment of Bowmar is proven to be defective in material or workmanship within one year from date of original purchase, such defects will be repaired or replaced (at the Company's option) free of charge for parts and labor.

This warranty does not apply to any product which has been damaged by accident or which has been misused, abused, altered, or repaired by anyone other than Bowmar.

This warranty is in lieu of all other warranties expressed or implied, and no person is authorized to assume for Bowmar any other liability in connection with the sale of this product.

To obtain repairs, the Calculator should be delivered, prepaid, to Bowmar/ALI, Inc. at address shown below. In-warranty units will be returned postage prepaid.

BOWMAR/ALI, INC.
531 MAIN STREET
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Bowmar

Five Function Eight Digit Electronic Calculator

The MX50
Bowmar Brain

Instructions for use

INTRODUCTION

Your Bowmar Brain is light enough and small enough to be used in one hand, but it provides a *standard keyboard and a light emitting diode (LED) display* that is easily read at home or in the office.

The eight digit display and the full floating decimal allow the calculation of any problem without sacrificing accuracy.

Whether you want to solve engineering or budget problems, your calculator has the ability with features such as clear entry, automatic squaring, and an omni-constant that will perform integer powers, reciprocals and fractions as well as chain and mixed calculations.

The battery will recharge in seven hours and operate the calculator for five, but with the charger/power supply no useful time will be lost since it operates the calculator while charging it.

We suggest that this Instruction Manual be read with the calculator in hand. Performing the operations as you read them will increase your familiarity with them. For a quick reference, an outline of operations is on the back of the calculator.

OPERATION

AC Operation:

Connect the Charger unit to any standard 120 Volt electrical outlet and plug the connector into the Calculator. After the above connections, the power switch may be turned on and operation started. (While connected to AC, the internal batteries are automatically charged whether the power switch is "ON" or "OFF".)

Battery Operation:

Disconnect the Charger cord and turn the power switch "ON". With normal use a full battery charge can be expected to supply about 5 hours of working time.

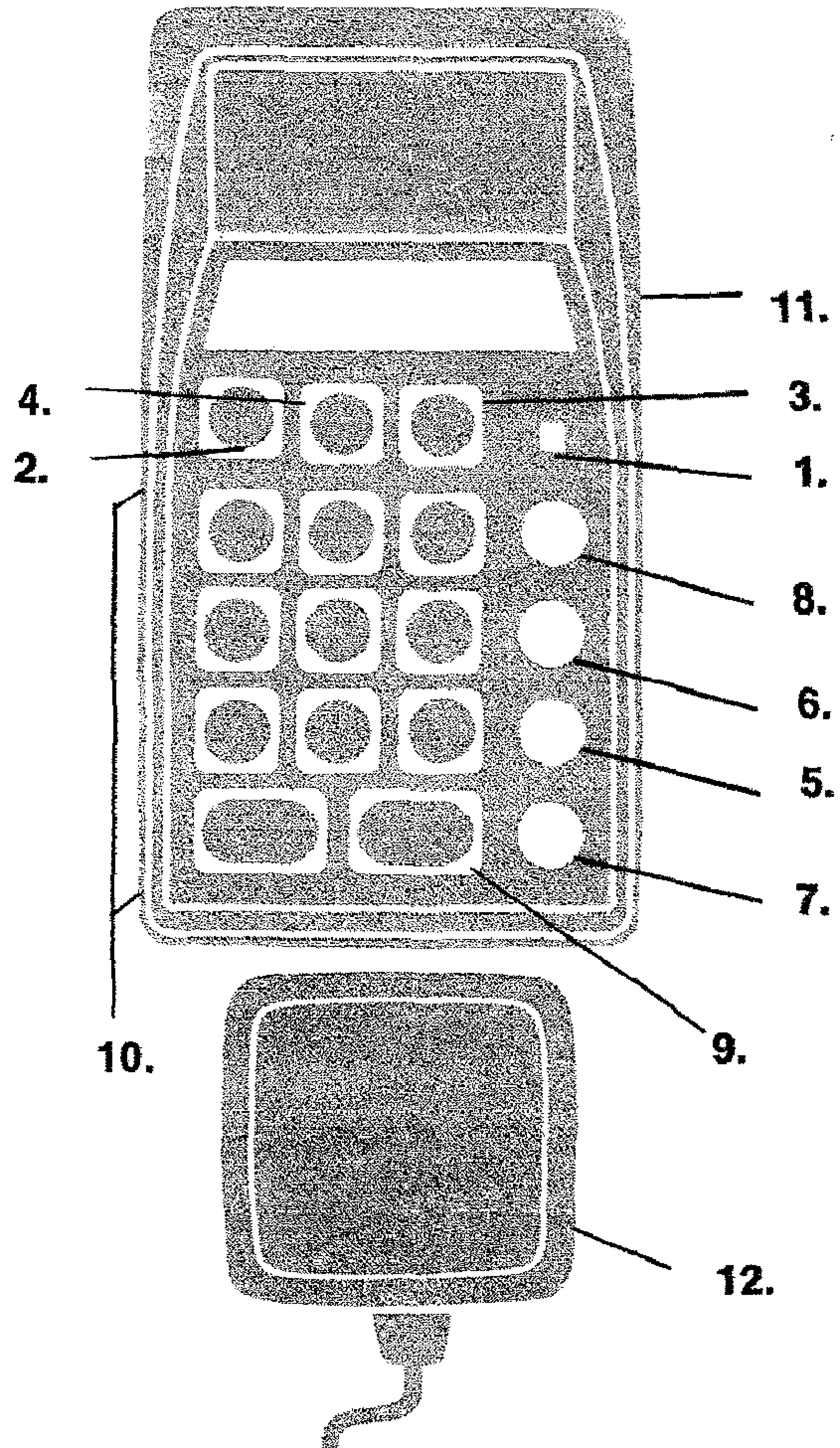
NOTE: When the low battery indicator (L) on the display is lighted, do not continue battery operation. This indicates need for a battery charge.

Battery Charging:










Simply follow the same procedure as in AC operation. The Calculator may be used during the charge period if desired. In order to fully charge a battery which has been completely discharged, 7 hours is required. In most cases, an overnight charge should be adequate if the batteries have not been fully discharged.

NOTE: Although no damage will result from prolonged periods with the Charger connected, it is advisable to remove the Charger cord when the Calculator is not in use after a full recharge cycle.

CAUTION: To avoid possible damage, use only the charger provided with the calculator.



CONTROLS & INDICATORS

- | | | |
|-----|--|---|
| 1. | "ON" Switch | Turns Calculator "ON" & "OFF". |
| 2. |  Key | Completes a per cent operation and conditions a discount or markup operation. |
| 3. |  Key | Clears the Calculator and the display of all numbers. |
| 4. |  Key | Completes multiply or divide operation. |
| 5. |  Key | Enters a "multiply" command. |
| 6. |  Key | Enters a "divide" command. |
| 7. |  Key | Adds the entered number or carries out a previously entered markup operation. |
| 8. |  Key | Changes the sign of a multiply or divide answer. Subtracts the entered number or carries out a previously entered discount operation. |
| 9. |  Key | Enters a decimal point. |
| 10. |  Keys | Enter digits of a number (limit 8 digits). |
| 11. | | Charger cord socket. |
| 12. | | Charger/Power Supply. |

Overflow Indicator

Indicates a calculation result that contains more than eight digits.

Appears as




Low Battery Indicator

Warns of need for battery charge during battery operation.

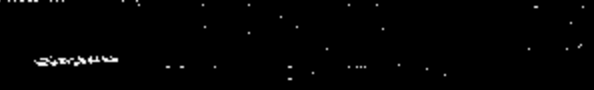
Appears as



Minus Sign Indicator

Activated by the  key for operations with negative numbers.

Appears as



Decimal Point Indicator

Automatically appears to the right of any number entered, unless inserted in another sequence by use of the Decimal key. With fractional numbers, it will be preceded by a zero.

BATTERY NOTES

1. With normal use at room temperature, a full battery charge can be expected to supply about 5 hours of accumulated working time.
2. The Calculator may be used while its battery is charging.
3. Batteries that have been neither used nor charged for as long as 2 or 3 months will suffer substantial loss of operating time through a tendency to self-discharge. As a general rule, batteries lose about 1% charge per day due to self-discharge, at normal temperatures.
4. For optimum performance and long life:
 - a. Alternate frequently between Battery and AC power.
 - b. Operate at or near normal room temperatures.
 - c. Charge as soon as possible upon appearance of the Low-Battery indicator.
5. Recharge time is 7 hours for a fully discharged battery, with the calculator off.
6. The Low-Battery indicator is designed to appear as soon as battery voltage drops to the lowest value that will support optimum performance of the Calculator. Should further discharge occur, through continued operations or self-discharge, the Low-Battery indicator may fail to appear. Do not continue to operate on batteries when this condition is noted, or a damaged battery may result.
7. As a general rule, if improper operation occurs, first try the Calculator with its charger connected. If operation is then normal, this indicates the batteries are low.
8. Do not store the unit in high temperature areas such as the top of radiators or the rear deck of automobiles exposed to the sun. The Calculator will operate satisfactorily over an ambient temperature range of 0 to 50C (32 to 122F) and relative humidity to 95%.

INSTRUCTIONS

1. To clear (erase)

A. Touch the **C** key twice

B. Cleared display will be:

0.

2. To enter (write a number)

Example: enter 123.45

A. First, clear by touching **C** twice

B. Then touch number and decimal keys for 123.45 one at a time. Always start with the left hand digit and progress from left to right.

Display will then be:

123.45

3. To clear an incorrect entry

Example: 48+ 12 is your calculation

A. You have already entered 48

Display is:

48.

B. You now touch the **+** key

Display will be:

48.

C. Then you enter 13 by mistake

The display is:

13.

A mistake!

D. To clear 13, touch the **C** key once

Display will be:

0.

E. Then enter '12'

Display will be:

12.

F. Finally, touch the **=** key for answer

Display will be:

60.

Note: Use **C** during, or immediately after entry of a number to clear entry. Use of **C** key when a result is displayed without overflow clears the result.

CALCULATIONS

1. ADDITION

Example #1: To calculate $16.39 + 9.83 =$

Do these steps display will be

- | | |
|--------------------------|--|
| a. Touch C twice | |
| b. Enter 16.39 | |
| c. Touch + | |
| d. Enter 9.83 | |
| e. Touch + Answer | |

Example #2:

To calculate $16 + 9 + 8.3 + 4.1 =$

Do these steps display will be

- | | |
|--------------------------|--|
| a. Touch C twice | |
| b. Enter 16 | |
| c. Touch + | |
| d. Enter 9 | |
| e. Touch + | |
| f. Enter 8.3 | |
| g. Touch + | |
| h. Enter 4.1 | |
| i. Touch + Answer | |

2. SUBTRACTION

Example #1: To calculate $12.81 - 3.6 =$

Do these steps display will be

- | | |
|--------------------------|--|
| a. Touch C twice | |
| b. Enter 12.81 | |
| c. Touch + | |
| d. Enter 3.6 | |
| e. Touch - Answer | |

Example #2: To calculate $23 - 6 + 2.1 - 5 =$

Do these steps display will be

- | | |
|--------------------------|--|
| a. Touch C twice | |
| b. Enter 23 | |
| c. Touch + | |
| d. Enter 6 | |
| e. Touch - | |
| f. Enter 2.1 | |
| g. Touch + | |
| h. Enter 5 | |
| i. Touch - Answer | |

Example #3:

To calculate $62 - 82 + 10 - 40 =$

Do these steps

display will be

- | | |
|--------------------------|-----|
| a. Touch C twice | 0. |
| b. Enter 62 | 62. |
| c. Touch + | 62. |
| d. Enter 82 | 82. |
| e. Touch - | 20. |
| f. Enter 10 | 10. |
| g. Touch + | 10. |
| h. Enter 40 | 40. |
| i. Touch = Answer | 50. |

3. MULTIPLICATION

Example #1: To calculate $29.32 \times 56.5 =$

Do these steps

display will be

- | | |
|--------------------------|---------|
| a. Touch C twice | 0. |
| b. Enter 29.32 | 29.32 |
| c. Touch X | 29.32 |
| d. Enter 56.5 | 56.5 |
| e. Touch = Answer | 1656.58 |

Example #2: To calculate $3 \times 21 \times 6.1 =$

Do these steps

display will be

- | | |
|--------------------------|-------|
| a. Touch C twice | 0. |
| b. Enter 3 | 3. |
| c. Touch X | 3. |
| d. Enter 21 | 21. |
| e. Touch X | 63. |
| f. Enter 6.1 | 6.1 |
| g. Touch = Answer | 384.3 |

Example #3: To calculate $31 \times 6 =$

Use of Omni-Constant

$31 \times 8.2 =$

$31 \times 7.6 =$

Do these steps

display will be

- | | |
|------------------------------|------|
| a. Touch C twice | 0. |
| b. Enter 31 | 31. |
| c. Touch X | 31. |
| d. Enter 6 | 6. |
| e. Touch = 1st Answer | 186. |
| f. Enter 8.2 | 8.2 |

- g. Touch [=] 2nd Answer 254.2
- h. Enter 7.6 7.6
- i. Touch [=] 3rd Answer 235.6

4. DIVISION

Example #1: To calculate $376 \div 53 =$

Do these steps display will be

- a. Touch [C] twice 0.
- b. Enter 376 376.
- c. Touch [=] 376.
- d. Enter 53 53.
- e. Touch [=] Answer 7.0943396

Example #2: To calculate $81 \div 3 \div 9 =$

Do these steps display will be

- a. Touch [C] twice 0.
- b. Enter 81 81.
- c. Touch [=] 81.
- d. Enter 3 3.

- e. Touch [+]
27.
- f. Enter 9
9.
- g. Touch [=] Answer 3.

Example #3: To calculate $181 \div 15 =$
Use of Omni-Constant $96 \div 15 =$

$117 \div 15 =$

Do these steps display will be

- a. Touch [C] twice 0.
- b. Enter 181 181.
- c. Touch [=] 181.
- d. Enter 15 15.
- e. Touch [=] 1st Answer 12.066666
- f. Enter 96 96.
- g. Touch [=] 2nd Answer 6.4
- h. Enter 117 117.
- i. Touch [=] 3rd Answer 7.8

5. MIXED ARITHMETIC

Example #1: To calculate $23 \times (-4) \div (-6) =$
Do these steps display will be

- | | |
|--------------------------|-----------|
| a. Touch C twice | 0. |
| b. Enter 23 | 23. |
| c. Touch X | 23. |
| d. Enter 4 | 4. |
| e. Touch = | 92. |
| f. Touch - | 92. |
| g. Touch ÷ | 92. |
| h. Enter 6 | 6. |
| i. Touch = | 15.333333 |
| j. Touch - Answer | 15.333333 |

Example #2:
To calculate $\frac{(9 + 6 - 5) \times 8}{20} - 8 =$

Do these steps display will be

- | | |
|-------------------------|----|
| a. Touch C twice | 0. |
| b. Enter 9 | 9. |
| c. Touch + | 9. |
| d. Enter 6 | 6. |

- | | |
|--------------------------|-----|
| e. Touch + | 15. |
| f. Enter 5 | 5. |
| g. Touch - | 10. |
| h. Touch X | 10. |
| i. Enter 8 | 8. |
| j. Touch ÷ | 80. |
| k. Enter 20 | 20. |
| l. Touch = | 4. |
| m. Touch + | 4. |
| n. Enter 8 | 8. |
| o. Touch - Answer | 4. |

6. EXPONENTS

Example #1: To calculate $(3)^5 =$
Do these steps display will be

- | | |
|-------------------------|-----|
| a. Touch C twice | 0. |
| b. Enter 3 | 3. |
| c. Touch X | 3. |
| d. Touch = | 9. |
| e. Touch = | 27. |

f. Touch **=** **81.**

g. Touch **=** Answer **243.**

7. OVERFLOW INTERPRETATION

The overflow indicator “[” will appear when the display capacity of the Calculator is exceeded.

For example, multiplication of $12345678 \times 345678 = 4267629279684$ will give the following display

[42676292

The “[” symbol indicates “overflow”, or an answer of more than the 8 digits shown. The 8 most significant digits are displayed.

Use the **C** key once to clear the overflow. Calculations can then continue with the displayed digits. Operation of the **C** key again will clear the answer.

8. REPEATED ADDITION

Example #1:

To calculate $6 + 3 + 3 + 3 = 15$

Do these steps

display will be

a. Touch **C** twice **0.**

b. Enter 6 **6.**

c. Touch **+** **6.**

d. Enter 3 **9.**

e. Touch **+** **12.**

f. Touch **+** **15.**

g. Touch **=** Answer **15.**

9. PERCENTAGE

Example #1: To calculate 5% of 125 =

Do these steps

display will be

a. Touch **C** twice **0.**

b. Enter 125 **125.**

c. Touch **X** **125.**

d. Enter 5 **5.**

e. Touch **%** Answer **6.25**

Example #2:
Add 5% tax to \$17.20
Do these steps

	display will be
a. Touch C twice	0.
b. Enter 17.20	17.20
c. Touch X	17.20
d. Enter 5	5.
e. Touch %	0.86
f. Touch + Answer	18.06

Example #3:
Take 7% discount from \$14.00
Do these steps

	display will be
a. Touch C twice	0.
b. Enter 14	14.
c. Touch X	14.
d. Enter 7	7.
e. Touch %	0.98
f. Touch - Answer	13.02

10. When adding and subtracting figures with a fixed decimal place this calculator will hold that decimal place.

Example #1

The articles just bought cost \$3.95, 2.05, 3.00, 2.50 and there is a return credit of \$1.00. How much will the bill be?

	display will be
a. Touch c	0.
b. Enter 3.95	3.95
c. Touch +	3.95
d. Enter 2.05	2.05
e. Touch +	6.00
f. Enter 3	3.
g. Touch +	9.00
h. Enter 2.5	2.5
i. Touch +	11.50
j. Enter 1	1.
k. Touch - Answer	10.50

**Notes
on your special calculation**

SPECIFICATIONS

Decimal Point:	Full floating decimal point.
Capacity:	Addition, subtraction, multiplication, division, percentage and omni-constant: 8 digits in / 8 digits out.
Functions:	General add, subtract, multiply, divide and percent. Chain multiplication and division. Mixed arithmetic. Constant multiplication and division. Exponents, fractions, reciprocals.
Power:	A.C. operation — 110/120V, 60 Hz. Battery operation — NiCd Batteries (3) 5 hour operation 7 hour charge.
Main Elements:	Large scale integrated circuit.
Supplementary Elements:	Mos ICs, Transistors, Diodes.
Dimensions:	Height 1 1/4", Width 3", Depth 5 3/4".
Weight:	9 oz.
Peripherals:	Charger/Power Supply, Vinyl Pouch, Instruction Book.