How to use your CENTURY MARK IV Electronic Calculator
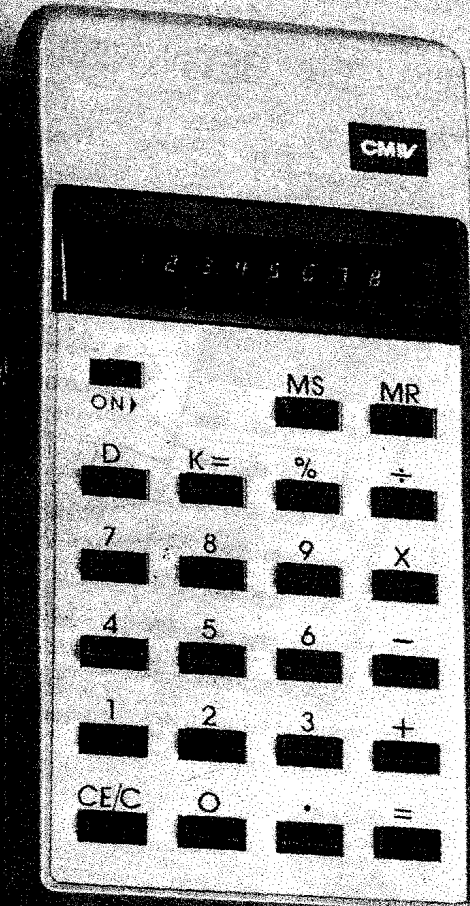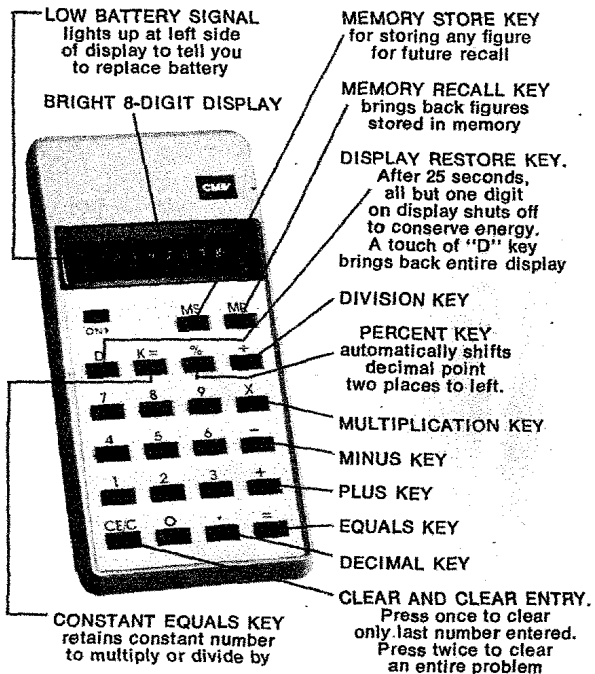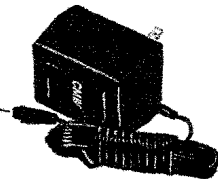
YOUR CENTURY MARK IV ADDS + SUBTRACTS – MULTIPLIES × AND DIVIDES ÷ AND THAT'S JUST THE BEGINNING

LOW BATTERY SIGNAL lights up at left side of display to tell you to replace battery

BRIGHT 8-DIGIT DISPLAY

MEMORY STORE KEY for storing any figure for future recall

MEMORY RECALL KEY brings back figures stored in memory

DISPLAY RESTORE KEY. After 25 seconds, all but one digit on display shuts off to conserve energy. A touch of "D" key brings back entire display

DIVISION KEY

PERCENT KEY automatically shifts decimal point two places to left.

MULTIPLICATION KEY

MINUS KEY

PLUS KEY

EQUALS KEY

DECIMAL KEY

CLEAR AND CLEAR ENTRY. Press once to clear only last number entered. Press twice to clear an entire problem

CONSTANT EQUALS KEY retains constant number to multiply or divide by

9-Volt Battery lasts 10 to 15 hours of constant use. Easy, inexpensive to replace. (AC Adapter available for use on ordinary house current.)

CENTURY MARK IV

What it is, how it works.

Your new Century Mark IV is a sophisticated yet simple to operate, 8-digit (display) electronic calculator. It combines advanced semi-conductor technology with everyday usefulness. It performs 4 basic functions of arithmetic—adding, subtracting, multiplying and dividing. Power: It operates on a 9-volt battery or, with the AC Adapter, on ordinary house current. A red decimal point will light up at the left of the display when a new battery is needed. Be sure power ("on" button) is turned off when changing batteries.

Things you can do with your Mark IV

In addition to the standard mathematical functions (+ – × ÷), you can multiply or divide a series of numbers by a single number (or constant). You can figure percentages in a matter of seconds. You can save a number (or store it) for future calculations. You can also **recall a number** in the Memory Bank to the Display Window for use in any calculation without clearing the Memory Bank.

This means that you'll be able to do a great many things with your MARK IV besides simple business calculations. For example: you can figure income tax, balance your checkbook, do comparison shopping, check gas mileage, figure interest rates, do accounting work, algebra problems, find square roots and much more.

On the next few pages you'll find 9 examples of types of problems you can solve quickly and easily with the Century Mark IV. Follow the steps in the order they are written down and you'll find it's fun to do complicated calculations as well as everyday discounts, markups, commissions and so on.

SWITCHES AND KEYS

Switch calculator ON. This turns on the power. All keys are now operational. **Tap Clear Key. . . .** C. Touch once to clear display each time the calculator is turned on. When calculating, one touch of C will clear an incorrect entry. Two touches will clear an entire problem so you can start over.

0 1 2 3 4 5 6 7 8 9

These are your **Numeral Keys.**

• Decimal Key. Enter the decimal point into the calculation as you would write it. It is not necessary to enter decimal point with whole numbers.

Function Keys

+ Plus Key. To add numbers together.

— Minus Key. To subtract (take away) one number from another number.

× Multiplication Key. To perform complex addition problems more rapidly, you multiply.

÷ Division Key. To find out how many times one number will go into another.

NOTE: Because the CENTURY MARK IV uses algebraic logic, you work problems on it exactly as you would write them down. In a chain problem (2 × 3 + 4 = 10), touching any of the four basic function keys (+, —, ×, ÷) will complete the previous operation and tell the calculator to perform the function touched. You can then read the answer in the Display Window.

= Equals Key. To complete any problems, press this key. Following multiplication or division, the last factor (number) is automatically retained as a constant, which may be used by pressing the K= key.

K= Constant Equals Key. following multiplication or division, the last factor (number) and function (X or ÷) are automatically retained as constants. To multiply or divide by the retained factor (number), enter the variable (new number) and touch K= . The constant is retained until another multiplication or division is completed with = key.

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D **Display Restore Key.** To conserve battery life, your MARK IV wipes out all but one digit from the Display Window 25 seconds after each operation. To restore the entire number, simply continue with the calculation or press the D key (Display Restore Key).

% **Percent Key.** To calculate a percentage, enter the desired number, touch % key, then the desired function Key × . The % key automatically shifts decimal point two places to the left.

MS **Memory Store Key.** To save (store) a number for further use, while you do other calculations, touch MS This stores displayed amount as a positive number in the Memory Bank. If there already was a number in the Memory Bank, it is automatically replaced by the new number.

MR **Memory Recall Key.** Recalls number in Memory Bank to display Window for use in any Calculation, but does **not** clear the Memory Bank.

7 WAYS YOUR CENTURY MARK IV CAN SAVE YOU TIME (with specific examples shown step by step).

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CURRENCY CONVERSION

Assuming an exchange rate of $1.00 = 12.50 Pesos, how much in dollars do you give the storekeeper if you buy a suit for 934.00 pesos, a hat for 56.00 pesos and a tie for 29.00 pesos?

KEY IN:	DISPLAY SHOWS:	EXPLANATION:
934 (Press keys (9) (3) (4)).	934	Cost of suit in pesos.
÷	934	
12.5	12.5	Exchange rate.
=	($) 74.72	*Cost in dollars ÷ 12.5 set up as constant.*
MS	($) 74.72	Store in memory.
56	56	Cost of hat in pesos.
÷	56	
K=	($) 4.48	*Cost in dollars.*
+	($) 4.48	
MR	($) 74.72	Recall memory.
=	($) 79.2	Accumulate total dollars.
MS	($) 79.2	Store in memory.
29	29	Cost of tie in pesos.
÷	29	
K=	($) 2.32	*Cost in dollars.*
+	($) 2.32	
MR	($) 79.2	Recall accumulated total.
=	($) 81.52	Total cost in dollars.

FIGURING DISCOUNT AND TAX WITH NET.

How much would you pay for a stereo costing $220.00 if you got a 15% discount and there was 5% sales tax?

KEY IN:	DISPLAY SHOWS:	EXPLANATION:
15	15	Percent discount.
%	0.15	
X	0.15	
($) 220	($) 220	Cost of the stereo.
=	($) 33.	Amount of discount. 220 set up as constant.
—	($) 33.	
K=	($) 187.	
MS	($) 187.	Gross less discount stored in memory.
5	5	Percent sales tax.
%	0.05	
X	0.05	
MR	($) 187.	Recall discounted amount. 187 set up as constant.
+	($) 9.35	Amount of tax.
K=	($) 196.35	*Net cost of stereo.*

EXPENSE DISTRIBUTION.

What percent of the total expenses has each department incurred if the expenses are as follows?

DEPARTMENT	EXPENSES	PERCENTAGE
Advertising	$425.50	?
Printing	$138.00	?
Training	$322.00	?
Marketing	$828.00	?
Production	$586.50	?
Total expenses:	?	100

KEY IN:	DISPLAY SHOWS:	EXPLANATION:
($) 425.5 Press (4) (2) (5) (.) (5)).	($) 425.5	*Advertising expense.*
+	($) 425.5	
($) 138	($) 138	*Printing expense.*
+	($) 563.5	
($) 322	($) 322	*Training expense.*
+	($) 885.5	
($) 828	($) 828	*Marketing expense.*
+	($)1713.5	
($) 586.5	($) 586.5	*Production expense.*
÷	($)2300.	TOTAL EXPENSES.
=	1.	Locks 2300 in as constant.
($) 425.5	($) 425.5	*Advertising expense.*
÷ K=	0.185	% of total expenses (18.5%).
MS	0.185	Store in memory.
($) 138	($) 138	*Printing expense.*
÷ K=	0.06	% of total expenses (0.06%).
+	0.06	
MR	0.185	Recall memory.
=	0.245	Accumulate.
MS	0.245	Store in memory.
($) 322	($) 322	*Training expense.*
÷ K=	0.14	% of total expenses (0.14%).
+	0.14	
MR	0.245	
=	0.385	
MS	0.385	Accumulate and store in memory.

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KEY IN:	DISPLAY SHOWS:	EXPLANATION:
($) 828	($) 828	*Marketing expense.*
÷ K=	0.36	% of total expenses (0.36%).
+	0.36	
MR	0.385	
=	0.745	
MS	0.745	Accumulate and store in memory.
($) 586.5	($) 586.5	*Production expense.*
÷ K=	0.255	% of total expenses (0.255%).
+	0.255	
MR	0.745	
=	1.	% proves out to 100%.

EXPENSE PRORATION.

Suppose now, that $3450 can be spent on the following expenditures instead of $2300. If each new expenditure is to remain the same percentage of the total as before, how much can now be spent on each expenditure?

DEPARTMENT	OLD EXPENSES	NEW EXPENSES
Advertising	$425.50	?
Printing	$138.00	?
Training	$322.00	?
Marketing	$828.00	?
Production	$586.50	?
TOTAL EXPENSES:	?	$3450

Solution: Divide new expense total by old expense total and multiply by old expenditures to find new expenditures.

KEY IN:	DISPLAY SHOWS:	EXPLANATION:
($) 425.5 (Press (4) (2) (5) (.) (5)).	($) 425.5	*Advertising expense.*

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KEY IN:	DISPLAY SHOWS:	EXPLANATION:
+	($) 425.5	
($) 138	($) 138	*Printing expense.*
+	($) 563.5	
($) 322	($) 322	*Training expense.*
+	($) 885.5	
($) 828	($) 828	*Marketing expense.*
+	($) 1713.5	
($) 586.5	($) 586.5	*Production expense.*
=	($) 2300.	TOTAL OLD EXPENSES.
MS	2300.	Store in memory.
(3) 3450	3450	Total New Expenditures.
÷	3450	
MR	2300	Recall old expenditures total.
×	1.5	
=	2.25	Locks 1.5 in as constant.
($) 425.5	($) 425.5	Old Advertising Expense.
× K=	638.25	*New prorated allocation.*
MS	638.25	Store in memory.
($) 138	($) 138	Printing expense.
× K=	($) 207.	*New prorated allocation.*
+	($) 207.	
MR	($) 638.25	
=	($) 845.25	Accumulate
MS	($) 845.25	Store in memory.
($) 322	($) 322	Old Training Expense.
× K=	($) 483.	*New prorated allocation.*
+	($) 483.	
MR	($) 845.25	
=	($)1328.25	Accumulate.
MS	($)1328.25	Store in memory.

KEY IN:	DISPLAY SHOWS:	EXPLANATION:
($) 828	($) 828	Old Marketing Expense.
× K=	($)1242.	*New prorated allocation.*
+	($)1242.	
MR	($)1328.25	
=	($)2570.25	Accumulate.
MS	($)2570.25	Store in memory.
($) 586.5	($) 586.5	Old Production Expense.
× K=	($) 879.75	*New prorated allocation.*
+	($) 879.75	
MR	($)2570.25	
=	($)3450.	New expenses prove out to $3450.

RETAIL PRICE (given cost and desired % profit on retail price).

How much do you sell goods for that cost $50.00 if you want a 35% profit on the retail price?

Solution: Find the complement of % profit desired (1 — % desired) and divide cost by this factor to obtain retail price.

KEY IN:	DISPLAY SHOWS:	EXPLANATION:
1	1	
—	1	
(%) 35	(%) 35	Desired % profit.
%	0.35	
=	0.65	Complement.
MS	0.65	
($) 50	($) 50	Cost of goods.
÷	($) 50	
MR	0.65	Recall complement.
=	($) 76.92307	*Retail price.*

HOW TO FIGURE COMPOUND INTEREST.

Calculate the future value and total interest earned on $4000.00 compounded at 10% interest per year for 5 years, using the formula:

$$FV = PV(1 + i)^n \text{ where:}$$

FV = future value, the balance after n periods.

PV = present value, the amount put into the bank.

i = interest rate per period (in decimal).

n = number of periods.

KEY IN:	DISPLAY SHOWS:	EXPLANATION:
1	1	
+	1	
(%) 10	(%) 10	Interest rate.
%	0.1	
×	1.1	(1 + i) set up for multiplication.
=	1.21	
K=	1.331	
K=	1.4641	Do these steps n-2 times.
K=	1.61051	
×	1.61051	(1 + i)⁵ set up to multiply.
($) 4000	($) 4000	Present value.
MS	($) 4000	Store in memory.
−	($) 6442.04	Balance after 5 years.
MR	($) 4000	Recall present value.
=	($) 2442.04	Total interest earned.

FINDING THE SQUARE ROOT OF A NUMBER.

Calculate the square root of 25.

Solution: Using the Newton-Raphson approximation method, choose an approximate starting value and then iterate until your number is reached.

$$\text{Formula: } a_{i+1} = \frac{\frac{n}{a_i} + a_i}{2}$$

where: a_{i+1} next approximation,

a_i = this approximation,

n = number whose square root you want to find.

KEY IN:	DISPLAY SHOWS:	EXPLANATION:
25	25	Number whose square root you want to find.
MS	25	Store in memory.
÷	25	
4	4	First approximation. Use a close guess for the starting approximation.
+	6.25	$\frac{n}{a_i}$.
K=	10.25	$\frac{n}{a_i} + a_i$.
÷	10.25	
2	2	
×	5.125	$\frac{\frac{n}{a_i} + a_i}{2}$ New approximation. Set up to square to see if this approximation is square root.
=	26.265625	Close, but not accurate. Re-iterate.

KEY IN:	DISPLAY SHOWS:	EXPLANATION:
MR	25	Recall n.
÷	25	
K═	4.878048	$\dfrac{n}{a_1}$.
+	4.878048	
K═	10.003048	$\dfrac{n}{a_1} + a_1$.
÷	10.003048	
2	2	
×	5.001524	$\dfrac{\frac{n}{a_1} + a_1}{2}$ Next approximation.
═	25.015242	Next approximation squared. Close, but not accurate. Re-iterate.
MR	25	
÷	25	
K═	4.998476	
+	4.998476	Do these steps until the new approximation squared equals the number whose square root you want.
K═	10.	
÷	10.	
2	2	
×	5.	Next approximation.
═	25.	Next approximation squared. a_1 squared = n. Routine complete.
÷	25.	
K═	5.	Divide n by approximation to recall square root.

ONE YEAR LIMITED WARRANTY

Your new electronic calculator is warranted to be free from defects in workmanship and material for a period of 1 year from the date of purchase. Defects caused by abuse, accidents, modifications, negligence, misuse or other causes are not covered by this warranty, nor are batteries. We will repair or replace, at our discretion, any calculator proved defective within 30 days of purchase. After 30 days, a charge of $3.50 will be made for handling and insurance.

Special Offers, 4225 Frontage Road, Oak Forest, Illinois 60452.

MODEL: Century Mark IV

SERIAL NUMBER (Please print) Number will be found at (base, top or bottom) of your Century Mark IV.

PURCHASE DATE   Month / Day / Year

SPECIAL OFFERS

PURCHASED FROM

YOUR NAME   (Please print)

ADDRESS   Street   Apt.

City   State   Zip