YOUR CENTURY MARK IV ADDS + SUBTRACTS − MULTIPLIES x AND DIVIDES ÷ AND THAT'S JUST THE BEGINNING

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 x 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.

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).
- Currency Conversion ............... Page 6
- Figuring Discount and Tax with Net ............... Page 6, 7
- Expense Distribution ............... Page 7, 8, 9
- Expense Proration ............... Page 9, 10, 11
- Retail Price (given cost and desired % Profit) ............... Page 11
- How to figure Compound Interest ............... Page 12
- Finding the Square Root of a Number ............... Page 13, 14
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:**
934 (Press keys (9) (3) (4)).
12.5 =
MS
56 +
K=

**DISPLAY SHOWS:**
934
934
12.5
($) 74.72
56
($) 4.48
MR
($) 74.72
= ($) 79.2
MS
($) 79.2
29
29
K=

**EXPLANATION:**
Cost of suit in pesos.
Exchange rate.
Cost in dollars + 12.5 set up as constant.
Store in memory.
Cost of hat in pesos.
Cost in dollars.
Recall memory.
Accumulate total dollars.
Store in memory.
Cost of tie in pesos.
Cost in dollars.
Recall accumulated total.
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:**
15 %
($) 220 =
MS
5 +
K=

**DISPLAY SHOWS:**
15
0.15
($) 220
($) 33.
($) 187.
($) 187.
($) 187.
($) 9.35
($) 196.35

**EXPLANATION:**
Percent discount.
Cost of the stereo.
Amount of discount. 220 set up as constant.
Gross less discount stored in memory.
Percent sales tax.
Recall discounted amount. 187 set up as constant.
Amount of tax.
Net cost of stereo.

**EXPENSE DISTRIBUTION.**

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

<table>
<thead>
<tr>
<th>DEPARTMENT</th>
<th>EXPENSES</th>
<th>PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advertising</td>
<td>$425.50</td>
<td>?</td>
</tr>
<tr>
<td>Printing</td>
<td>$138.00</td>
<td>?</td>
</tr>
<tr>
<td>Training</td>
<td>$322.00</td>
<td>?</td>
</tr>
<tr>
<td>Marketing</td>
<td>$828.00</td>
<td>?</td>
</tr>
<tr>
<td>Production</td>
<td>$586.50</td>
<td>?</td>
</tr>
<tr>
<td>Total expenses:</td>
<td>?</td>
<td>100</td>
</tr>
</tbody>
</table>
KEY IN: DISPLAY SHOWS: EXPLANATION:

($) 425.5 ($) 425.5 Advertising expense.
Press (4)
(2) (5) ()
(5) ).

$+$ ($) 425.5 Printing expense.
($) 138 ($) 138 $+$ ($) 563.5
($) 322 ($) 322 $+$ ($) 935.5
($) 828 ($) 828 $+$ ($) 1713.5
($) 586.5 ($) 586.5 $+ ($) 2300. $=$ 1.
($) 425.5 ($) 425.5 $+ K= 0.185
MS 0.185 % of total expenses (18.5%).
($) 138 ($) 138 $+ K= 0.06
MR 0.06 % of total expenses (0.06%).
=$ 0.06 Recall memory.
MR 0.185 Accumulate.
MS 0.245 Store in memory.
($) 322 ($) 322 $+ K= 0.14
Training expense.
% of total expenses (0.14%).
+$ 0.14 MR 0.245
=$ 0.385 MS 0.385 Accumulate and store in memory.

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?

<table>
<thead>
<tr>
<th>DEPARTMENT</th>
<th>OLD EXPENSES</th>
<th>NEW EXPENSES</th>
</tr>
</thead>
<tbody>
<tr>
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<td>$425.50</td>
<td>$425.50</td>
</tr>
<tr>
<td>Printing</td>
<td>$138.00</td>
<td>$138.00</td>
</tr>
<tr>
<td>Training</td>
<td>$322.00</td>
<td>$322.00</td>
</tr>
<tr>
<td>Marketing</td>
<td>$828.00</td>
<td>$828.00</td>
</tr>
<tr>
<td>Production</td>
<td>$586.50</td>
<td>$586.50</td>
</tr>
</tbody>
</table>

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

KEY IN: DISPLAY SHOWS: EXPLANATION:

($) 425.5 ($) 425.5 Advertising expense.
Press (4)
(2) (5) ()
(5) ).
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.
MR 2300. Store in memory.
(3) 3450 3450 Total New Expenditures.
← 3450 Recall old expenditures total.
MR 2300.
× 1.5 Locks 1.5 in as constant.
− 2.25
($) 425.5 ($) 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 ($) 638.25 Accumulate.
− ($) 845.25 −
MS ($) 845.25 ($) 845.25 Store in memory.
(3) 322 ($) 322 Old Training Expense.
× K= ($) 483. New prorated allocation.
+$ ($) 483. +
MR ($) 845.25 ($) 845.25 Accumulate.
= ($)1328.25 =
MS ($)1328.25 ($)1328.25 Store in memory.

KEY IN:  DISPLAY SHOWS:  EXPLANATION:
($) 828 ($) 828  Old Marketing Expense.
× K= ($)1242. New prorated allocation.
+$ ($)1242. +
MR ($)1328.25 ($)1328.25 Accumulate.
= ($)2570.25 =
MS ($)2570.25 ($)2570.25 Store in memory.
($) 586.5 ($) 586.5 Old Production Expense.
× K= ($) 879.75 New prorated allocation.
+$ ($) 879.75 +
MR ($)2570.25 ($)2570.25 Accumulate.
= ($)3450. New expenses prove out to $3450.
MS 2300. Store in memory.
($) 828 ($) 828  Old Advertising Expense.

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 Desired % profit.
− 1
(%) 35 (%) 35 Complement.
% 0.65
= 0.65
MS 0.65
($) 50 ($) 50 Cost of goods.
− ($) 50 −
MR 0.85 Recall complement.
= ($) 76.92307 Retail price.
FINDING THE SQUARE ROOT OF A NUMBER.

Calculate the square root of 25. Using the Newton-Raphson approximation method, choose an approximate starting value and then iterate until your number is reached.

Formula: \( a_{n+1} = \frac{a_n + \frac{n}{a_n}}{2} \)

where: \( a_{n+1} \) = next approximation,
\( a_n \) = 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.

Store in memory.

KEY IN:  
DISPLAY SHOWS:  
EXPLANATION:  
1 1  
Interest rate.

10 1  
(1 + i) set up for multiplication.

K= 1.21  
Do these steps n-2 times.

K= 1.331  
K= 1.4641

X 1.61051

(1 + i) \( n \) set up to multiply.

X 1.61051

\( n \) \( \frac{n}{a_n} \)

MS ($) 4000  
Store in memory.

($) 4000  
Present value.

($) 6442.04  
Balance after 5 years.

($) 4000  
Recall present value.

($) 2442.04  
Total interest earned.

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.

Formula: \( a_{n+1} = \frac{a_n + \frac{n}{a_n}}{2} \)

where: \( a_{n+1} \) = next approximation,
\( a_n \) = 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.

Store in memory.

KEY IN:  
DISPLAY SHOWS:  
EXPLANATION:  
1 1  
Interest rate.

10 1  
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DISPLAY SHOWS:  
EXPLANATION:  
25 25  
Number whose square root you want to find.

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DISPLAY SHOWS:  
EXPLANATION:  
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KEY IN:  
DISPLAY SHOWS:  
EXPLANATION:  
25 25  
Number whose square root you want to find.

Store in memory.

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EXPLANATION:  
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Total interest earned.
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

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