

## 1-YEAR GUARANTEE

Montgomery Ward guarantees this Electronic Calculator against defects in materials and workmanship, as follows:

For 1-year from date of purchase Montgomery Ward will repair or, at its option, replace any defective part free, including labor.

For service covered by this guarantee, return calculator to any Montgomery Ward branch with evidence of date of purchase

All correspondence regarding your calculator should include the model number and serial number found on the bottom of the calculator.

Distributed by Montgomery Ward & Co., Inc.  
Chicago, Illinois 60607

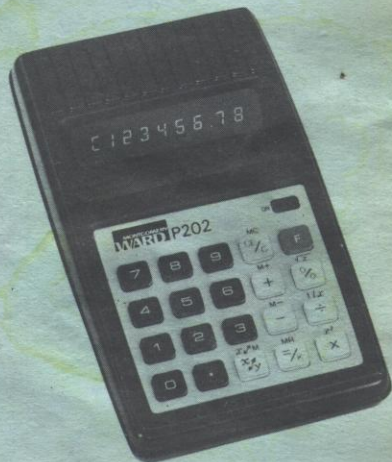
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**MONTGOMERY  
WARD**

## P202 MEMORY + ELECTRONIC CALCULATOR



Distributed By Montgomery Ward and Co., Inc.  
Chicago, Illinois 60607  
Assembled in U.S.A.

## INTRODUCTION

Modern electronic technology has provided a new tool for use in home, office or school.

Your Electronic Calculator will perform standard Addition, Subtraction, Multiplication and Division in chain or mixed calculations. The addition of a MEMORY register, with full capability to Add to or Subtract from the MEMORY, has made possible calculations of complex problems. In addition to such added features as Automatic Percentage calculations your calculator will automatically store a Constant for all four functions of Addition, Subtraction, Multiplication and Division. Also included are such Algebraic features as  $1/x$ ,  $\sqrt{x}$ ,  $x^2$ . You may work from an internal battery source or, by means of an [optional] A.C. adaptor, from any convenient 110-120 volts A.C. outlet.

To simplify operation, your calculator is programmed for "THINK AND TOUCH"—"THINK" the mathematical sequence and "TOUCH" the appropriate keys as you think—the correct answer instantly appears on the bright, clear eight-digit display. The decimal point automatically moves to the correct position.

## SUGGESTED USES

### Home

- Budgets
- Unit Pricing
- Stock & Bond Investments
- Interest Rate
- Check Book Balancing
- Clothing Invoices
- Grocery Bills
- Taxes

### Business

- Expense Report
- Percentage Profit
- Cost Analysis
- Compound Interest
- Payroll
- Taxes
- Invoicing

### School

- Check Basic Arithmetic Away From Home
- Budget
- School
- Tuition
- Slide Rule Calculations

**Convenient, rapid, accurate. You'll find many uses for your Electronic Calculator.**

## PORTABLE BATTERY OR A.C. OPERATION

- Your Portable Electronic Calculator is supplied with a 9 volt battery.
  - When the battery is almost discharged a low battery warning signal will appear on the left side of the display [L]. To prevent improper calculations the battery must be replaced as soon as possible.
  - To replace battery, slide the battery cover off the battery compartment, and CAREFULLY remove the battery. The battery cover is located on the underside of the calculator. Hold the battery in one hand and GENTLY unsnap the battery connector. Snap a new battery into the connector, replace in the battery compartment and slide the cover back in place.
  - Note: To prevent damage to your calculator, remove a bad battery. Do not store your calculator for extended periods of time with a battery in the battery compartment.
  - Under normal operating conditions a new battery will provide about 16 hours of calculating time.
  - To conserve battery life turn the calculator off when not in use.
  - For A.C. operation, it will be necessary to use the model 67-8658 A.C. adaptor (optional), designed specifically for this calculator. Connect the adaptor to any convenient source of 110-120 volts A.C., and push the jack into the socket at the top side of the case. When the jack is inserted, the battery is automatically disconnected.
- NOTE:** Use of any A.C. adaptor other than the type specifically designed for this calculator, may cause damage to the electronic circuits within the unit. See your Dealer for purchase of the proper A.C. adaptor.



## A.C. ADAPTOR SOCKET



- Shift Function Indicator
- Overflow Indicator
- L Low Battery Indicator
- I Memory Indicator
- Minus Sign

## DISPLAY

7	8	9	MC	F
			ce/c	
4	5	6	M+	$\sqrt{x}$
			+	%
1	2	3	M-	$1/x$
			-	÷
0	●	XZM	MR	$x^2$
		XZY	=/k	X

## KEYS AND SWITCHES

**POWER SWITCH**—Turns the calculator “ON” or “OFF”. A red dot will be visible when the switch is in the “ON” position.

**NUMERIC KEYS**—Standard 1 to 9 keyboard is provided as well as [0] and decimal point [.] .

In order to give your portable calculator maximum capability in a minimum size, 8 keys incorporate a **SHIFT FUNCTION SYSTEM** similar to a typewriter. THE CALCULATOR RESPONDS TO THE FUNCTION IMPRINTED ON THE KEYS IN THE UNSHIFTED MODE, AND THE FUNCTIONS ABOVE THE KEYS IN THE SHIFTED MODE.

[F] - This is the calculator's **SHIFT FUNCTION KEY**. Touching the [F] key enables the dual function keys to respond to the shifted mode. The unshifted mode may be reestablished by touching any key, including the [F] key.

**NOTE:** Use of any shifted function must be preceded by touching the [F] key.

[CE/C] **CLEAR ENTRY/CLEAR KEY**—This is a triple function key which will clear the display of the last entry or result on the first push and on the second push will clear the calculator of all previous calculations. See also **DISPLAY BLANKING** on page 7. **NOTE: MEMORY CLEAR MUST BE DONE SEPARATELY.**

[+] [-] [×] [÷] **OPERATE KEYS**—These keys will perform any previous operation as well as instruct the calculator as to the next operation to be performed.

[=]/K] **RESULT KEY**—At the conclusion of calculation, touching this key will immediately place the answer on the display. In addition this key operates the **AUTOMATIC CONSTANT (K)**. (See section under calculations with a constant).

[%] **PERCENT KEY**—This is a special purpose key used to simplify calculations involving Percentage (mark-up, discount). See example page 11.

[XZY] **EXCHANGE KEY**—This is a special purpose key used to exchange the contents of the Display Register and the Constant Register. See example page 14.

## SHIFTED FUNCTIONS

**NOTE:** These Functions Must Be Preceded By Depressing the [F] Key

[MC] or [F] [CE/C] MEMORY CLEAR—Clears the memory of all previous entries.

[MR] or [F] [=/k] MEMORY RECALL—Recalls the contents of the memory to the display and leaves the contents of the memory unchanged.

[M+] or [F] [+ ] MEMORY PLUS—Adds the number on the display to the memory.

[M-] or [F] [- ] MEMORY MINUS—Subtracts the number on the display from the memory.

[X↔M] or [F] [X↔Y]—Exchanges the contents of the display and memory.

[1/x] or [F] [1/ ]—Computes the reciprocal of the displayed number.

[√x] or [F] [%]—Computes the square root of the displayed number.

[x²] or [F] [x]—Computes the square of the displayed number.

## DISPLAY INDICATORS

- [●] Indicates shifted function mode.
- [-] MINUS SIGN—The minus sign will appear to the left of the most significant digit and will shift in position with additional numbers.
- [I] MEMORY INDICATOR—The memory in use indicator will light when any number except zero is in the memory.
- [L] LOW BATTERY INDICATOR—A warning indicator is provided to advise when the battery should be changed. After the indicator goes on there is approximately 1 hour of calculating time remaining.

DISPLAY BLANKING/BATTERY POWER SAVER—Approximately 40 seconds after the last entry the display will blank out, except for a bar [-] in the center of digit 5. All previous calculations will be retained. To bring back the displayed numbers simply go on with your calculations or press the CE/C Key once.

DECIMAL POINT—Decimal point in the result is always floating, with a maximum of 7 places.

OVERFLOW INDICATOR—[ ] —When the result of a calculation exceeds 8 digits (99999999), the capacity of the Calculator has been reached. This is indicated by the appearance of [ ] on the left side of the display. **NOTE THAT THE CORRECT POSITION OF THE DECIMAL POINT IS NOW 8 PLACES TO THE RIGHT.** Appearance of the overflow indicator inhibits further calculations until the indicator is removed by depressing the [CE/C] key just once.

A NEGATIVE OVERFLOW is indicated by the combination of the overflow and minus sign [E].

## BASIC OPERATING INSTRUCTIONS

- A. Slide power switch to the left to turn on calculator.
- B. To enter a number "touch" the numeric keys in sequence.

EXAMPLE: to enter 123.45 Display  
Touch [1] [2] [3] [.] [4] [5] 123.45

- C. To clear an incorrect entry use the [CE/C] key.

EXAMPLE: Your calculation is  $12 \times 7 =$   
You have entered [1] [2] [x] 12.  
In ERROR you touch [8] 8.

"MISTAKE" "MISTAKE"  
To correct the mistake touch [CE/C] key once 12.  
Enter correct number [7] 7.  
Touch result key [=/k] Answer 84.

**NOTE:** After clearing an entry, do not duplicate the operate function.



## EXAMPLES OF BASIC FUNCTIONS

**NOTE:** Touch [CE/C] twice before beginning a calculation.

### ADDITION

Example No. 1: to calculate  $13.35 + 4.56 = ?$

			Display
A.	Enter	13.35	13.35
B.	Touch	[+]	13.35
C.	Enter	4.56	4.56
D.	Touch	[=/K] answer	17.91

Example No. 2: to calculate  $9 + 17 + 32.5 = ?$

			Display
A.	Enter	9	9.
B.	Touch	[+]	9.
C.	Enter	17	17.
D.	Touch	[+]	26.
E.	Enter	32.5	32.5
F.	Touch	[=/K] answer	58.5

**NOTE:** Each time an operation key [+ , - , X , ÷ , %] is touched, the result of the previous calculation is displayed.

### SUBTRACTION

Example No. 1: to calculate  $436.14 - 103.9 = ?$

			Display
A.	Enter	436.14	436.14
B.	Touch	[-]	436.14
C.	Enter	103.9	103.9
D.	Touch	[=/K] answer	332.24

Example No. 2: to calculate  $183.70 - 341.60 = ?$

			Display
A.	Enter	183.70	183.70
B.	Touch	[-]	183.70
C.	Enter	341.60	341.60
D.	Touch	[=/K] answer	-157.90

**NOTE:** The answer is a negative number (credit balance).

## MULTIPLICATION

Example No. 1: to calculate  $31.62 \times 58.6 = ?$

				Display
A.	Enter	31.62		31.62
B.	Touch	[X]		31.62
C.	Enter	58.6		58.6
D.	Touch	[=/K] answer		1852.932

Example No. 2: to calculate  $3 \times 4 \times 1.05 = ?$

				Display
A.	Enter	3		3.
B.	Touch	[x]		3.
C.	Enter	4		4.
D.	Touch	[x]		12.
E.	Enter	1.05		1.05
F.	Touch	[=/K] answer		12.6

## DIVISION

Example No. 1: to calculate  $196 \div 7 = ?$

				Display
A.	Enter	196		196.
B.	Touch	[÷]		196.
C.	Enter	7		7.
D.	Touch	[=/K] answer		28.

## CHAIN CALCULATIONS

Example No. 1: to calculate  $15.3 \times 13.7 \div 4 + 19 - 11 = ?$

				Display
A.	Enter	15.3		15.3
B.	Touch	[X]		15.3
C.	Enter	13.7		13.7
D.	Touch	[÷]		209.61
E.	Enter	4		4.
F.	Touch	[+]		52.4025
G.	Enter	19		19.
H.	Touch	[-]		71.4025
I.	Enter	11		11.
J.	Touch	[=/K] answer		60.4025

## CALCULATIONS USING A CONSTANT CONSTANT MULTIPLICATION

For multiplication the FIRST number entered is the Constant

example	operation	display
3.72 is a constant		
3.72 X 15	3.72 [X] 15 [=/k]	55.8
3.72 X 30	30 [=/k]	111.6
3.72 X 215	215 [=/k]	799.8

## CONSTANT DIVISION

For division the SECOND number entered is the Constant

example	operation	display
12 is a constant		
48 ÷ 12	48 [÷] 12 [=/k]	4.
180 ÷ 12	180 [=/k]	15.
756 ÷ 12	756 [=/k]	63.

## CONSTANT ADDITION

For addition the SECOND number entered is the Constant

example	operation	display
17 is a constant		
15 + 17	15 [+] 17 [=/k]	32.
27.5 + 17	27.5 [=/k]	44.5
92.8 + 17	92.8 [=/k]	109.8

## CONSTANT SUBTRACTION

For subtraction the SECOND number entered is the Constant

example	operation	display
25.5 is a constant		
57 - 25.5	57 [-] 25.5 [=/k]	31.5
32 - 25.5	32 [=/k]	6.5
12 - 25.5	12 [=/k]	- 13.5

**NOTE:** Since the constant operation is automatic do not push the [=/k] key more than once for any operation.

**PERCENTAGE CALCULATION %**—The percent key is useful for dividing numbers by 100, and in markon-markdown problems, it reduces the number of steps required.

## PERCENTAGE CALCULATIONS

**YIELD:** You borrow \$5000. How much interest will you pay at 7.75%?

$$7.75 [\%] [X] 5000 [=/k] \quad 387.5$$

**MARK UP:** Your cost is \$323.00 and you wish to earn 16%.

$$323 [+] 16 [\%] [=/k] \quad 374.68$$

**MARK DOWN (DISCOUNT):** Your normal selling price is \$323.00 and you want to discount the item by 16%.

$$323 [-] 16 [\%] [=/k] \quad 271.32$$

## USE OF THE MEMORY

The Memory is a place to store a number for future use. All memory functions (M+, M-, MR, MC, X/M) are used in shifted mode.

## PRODUCT OF SUM AND DIFFERENCE

**NOTE:** Before starting any calculation clear the Memory and the Display. F[CE/C] [CE/C] [CE/C]

Problem:  $(12 + 34) \times (98 - 76) = ?$

Key	Display	Memory
12	12.	0
[+]	12.	0
34	34.	0
[=/k]	46.	0
[F] [+]	46.	46
98	98.	46
[-]	98.	46
76	76.	46
[X]	22.	46
[F] [=/k]	46.	46
[=/k] answer	1012.	46



## SAMPLE CALCULATION

To calculate expenses at a hotel for 3 days:

Expense	Key	Display	Memory
	Touch [CE/C]		
	Twice	0.	
	Touch [F] [CE/C]	0.	0.
Telephone Calls— \$9.30	Enter 9.30	9.30	0.
	Touch [F] [+]	9.30	9.30
Room—3 days @\$14.00	Enter 3	3.	9.30
	Touch [X]	3.	9.30
	Enter 14.00	14.00	9.30
	Touch [=/K]	42.00	9.30
	Touch [F] [+]	42.00	51.30
Laundry 3 Shirts @\$.50	Enter 3	3.	51.30
	Touch [X]	3.	51.30
	Enter .50	0.50	51.30
	Touch [=/K]	1.5	51.30
	Touch [F] [+]	1.5	52.80
Meals \$22.00 plus 15% Gratuities	Enter 22.	22.	52.80
	Touch [+]	22.	52.80
	Enter 15	15.	52.80
	Touch [%]	3.3	52.80
	Touch [=/K]	25.3	52.80
	Touch [F] [+]	25.3	78.10
Room Service 3 Days @\$3.30/day	Enter 3	3.	78.10
	Touch [X]	3.	78.10
	Enter 3.30	3.30	78.10
	Touch [=/K]	9.90	78.10
	Touch [F] [+]	9.90	88.00
Courtesy Discount 7.5%	Touch [F] [=/K]	88.00	88.00
	Touch [X]	88.00	88.00
	Enter 7.5	7.5	88.00
	Touch [%]	6.6	88.00
	Touch [F] [-]	6.6	81.40
Taxes 5%	Touch [F] [X] [Y]	81.40	6.6
	Touch [+]	81.40	6.6
	Enter 5	5.	6.6
	Touch [%]	4.07	6.6
	Touch [=/K]	85.47	6.6
	Answer		

## EXAMPLE OF ALGEBRAIC FUNCTIONS $\sqrt{x}$ , $1/x$ , $x^2$ .

To calculate:  $\frac{1}{\sqrt{(6)(6)-11}+15} = ?$

	Key	Display
A.	Touch [CE/C]	0.
B.	Enter 6	6.
C.	Touch [F] [X]	36.
D.	Touch [-]	36.
E.	Enter 11	11.
F.	Touch [=/K]	25.
G.	Touch [F] [%]	5.
H.	Touch [+]	5.
I.	Enter 15	15.
J.	Touch [=/K]	20.
K.	Touch [F] [+]	Answer 0.05

## EXAMPLE OF OVERFLOW

$4266 \times 53125 \times 1862 = ?$

	Key	Display
A.	Touch [CE/C]	0.
B.	Enter 4266	4266.
C.	Touch [X]	4266.
D.	Enter 53125	53125.
E.	Touch [X]	[ 2.2663125

**NOTE:** The overflow indicator is lit and the decimal point is shifted 6 places to the LEFT. The correct answer is 226631250.

To continue

F.	Touch [CE/C]	2.2663125
G.	Enter 1862	1862.
H.	Touch [=/K]	4219.8738

Correct answer is  $4219.8738 \times 10^6 = 421987380000$ .

### EXAMPLE OF $x \div y$ KEY OPERATION

To Calculate  $\frac{230}{10 \times 69} = ?$

Calculate the denominator first.

		Display
A. Enter	10	10.
B. Touch	[X]	10.
C. Enter	69	69.
D. Touch	[+]	690.
E. Enter	230	230.
F. Touch	[ $x \div y$ ]	690.
G. Touch	[= /K]	Answer 0.3333333

### METRIC CONVERSION CONSTANTS

From	Multiply by	To
Millimeters	.03937	Inches
Meters	39.37	Inches
Cubic centimeter (cc)	.061025	Cubic inches
Kilometers	.621377	Miles
Liters	.26418	Gallons
Grams	.03527	Ounces
Kilograms	2.2046	Pounds

For reciprocal constants (such as inches to millimeter) use reciprocal of constant as multiplier (1 divided by .03937 = 25.4)

Conversions of temperature

Fahrenheit to Centigrade

Temp F [-] 32 [X] 5 [+] 9 = Temp. C.

Temp C [X] 9 [+] 5 + 32 = Temp. F.

### CUSTOMER SERVICE

**In Warranty Service.** Return the calculator to your nearest Montgomery Ward branch with evidence of date of purchase.

**Out of Warranty Service.** State the nature of your difficulty. As with any fine equipment pack carefully and forward via insured, prepaid parcel post to:

**Wards (DAN) Service Center**  
43-17 Queens St.  
Long Island City, N.Y. 11101

### Product Registration Owner's Copy

Complete and mail the enclosed Product Registration Card within 10 days of purchase or receipt as a gift. Also record the serial number of your calculator below. Any correspondence concerning your calculator must include both model and serial number.

P202

DAN-8656A

57X-11899

25 MAR 75

Model No.

Serial No.

Purchase Date