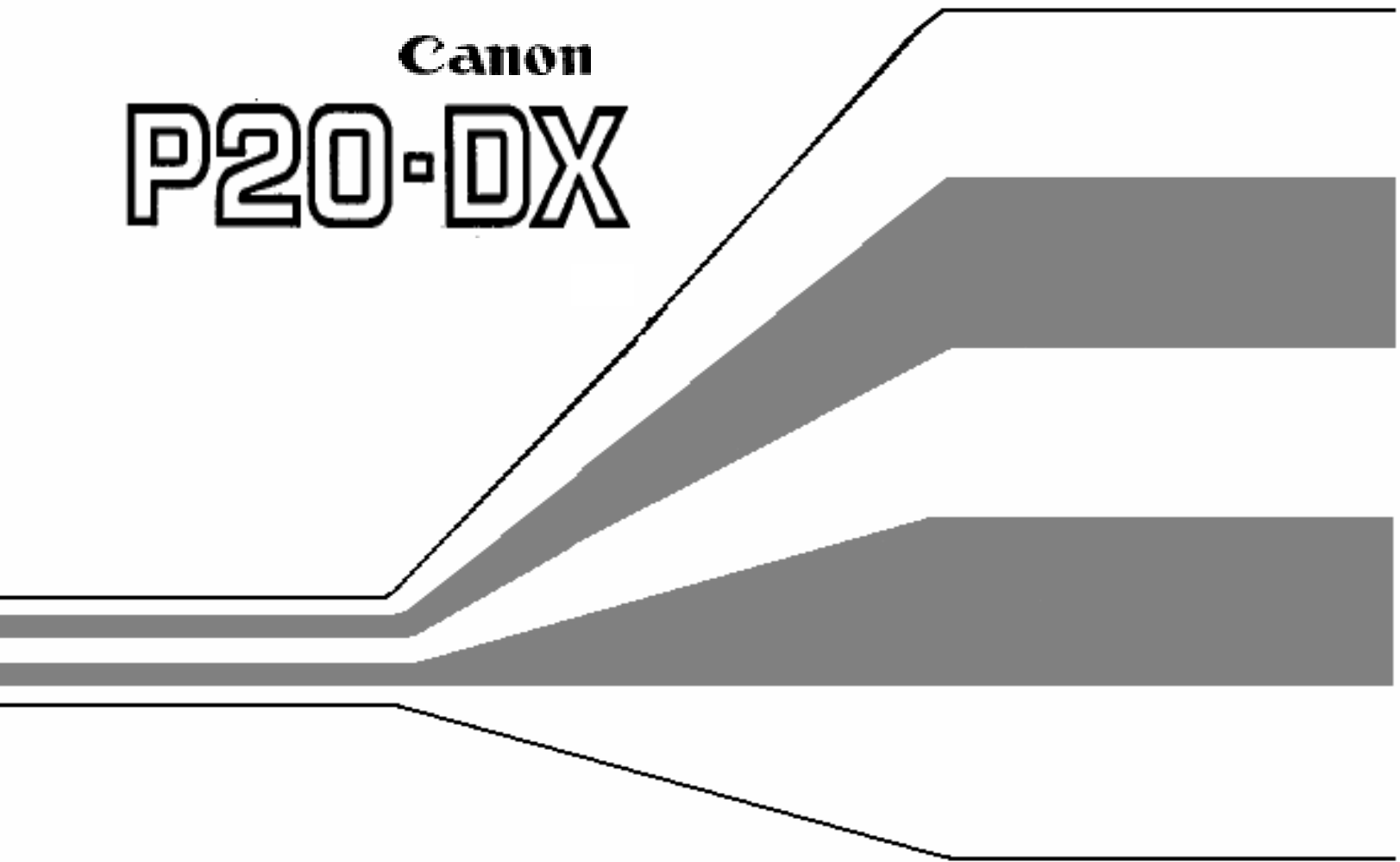


Canon
P20-DX



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1. Key and Controls

Numeral Keys/Decimal Point Key: For entering numbers.

Addition and Subtraction Keys

Subtotal Key: For obtaining intermediate results of addition and subtraction and the number of items (the number of times the “+” or “-“ keys have been pressed).

Total Key: For obtaining results of addition and subtraction and the number of items (the number of times the “+” or “-“ keys have been pressed).

Multiplication and Division Keys

Equal Key: For obtaining results of multiplication and division.

Clear Key: For clearing all registered calculations except memory.

Clear Entry Key: For correcting incorrect entries.

Percent Plus/Minus Key: For performing percentage add-on and discount calculations.

Memory Plus/Equal Key: For obtaining a calculation result and adding the result automatically to the memory. This key is also used to add a number to the memory.

Memory Minus/Equal Key: For obtaining a calculation result and subtracting the result automatically from the memory. This key is also used to subtract a number from the memory.

Subtotal Recall Memory Key: Used to recall the memory contents. The memory register is not cleared.

Total Recall Memory Key: Used to recall the memory contents. At the same time the memory register is cleared.

Power On/Paper Feed Key: Used to feed the paper when the power switch is on, and also used to reactivate the display if the Automatic Power Off Function (see p.6) turns the calculator off.

Decimal Point Selector Switch: For designating the decimal point position for calculation results.

F (Floating Decimal Point): All effective numbers up to 10 digits are printed or displayed.

+ (Add-Mode): Addition and subtraction are performed with an automatic 2-digit decimal. The “+” key need not be depressed for individual entries.

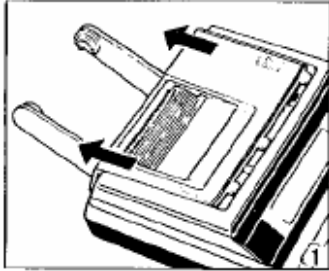
Power and Printer Switch: This switch is used to turn the power on and off and also to turn the print function on and off. Slide the switch to the center position to turn the power on. Setting the switch at the leftmost position turns the print function on.

When printing is not required (i.e. the printer switch is OFF), the calculator can be used as an ordinary display model.

Input Buffer Register Function: The buffer register allows all numbers, basic function and other function keys to be depressed while numbers are being printed. The calculator remembers up to 9 key entries in the register, and calculates them in the sequence entered.

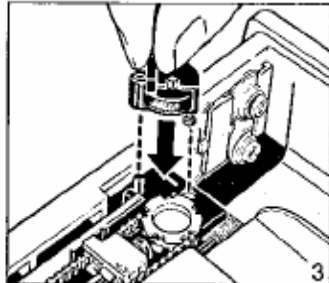
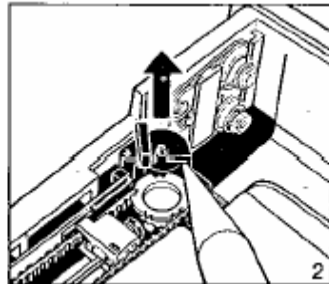
Automatic Power Off Function: When the power switch is turned ON but none of the keys is depressed for more than about six minutes, the display goes out automatically.

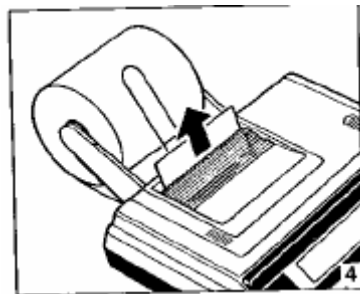
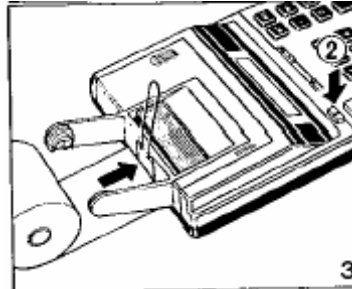
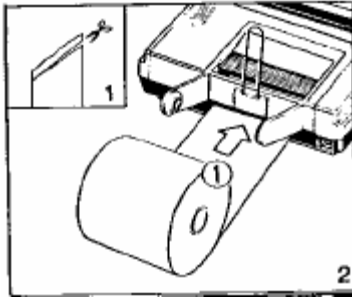
In this case, depress the “Power On/Paper Feed” key to start the calculation, 0 will appear on the display.



2. How to Replace the Ink Roller

- 1) Remove the printer cover.
- 2) Remove the old ink roller by inserting the tip of a pen or other pointed object to the right of the retainer pin and lifting the roller out.
- 3) Set a new Canon CP-12 ink roller into position.
- 4) Replace the printer cover.





3. How to Insert Printing Paper

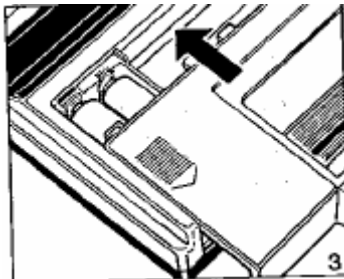
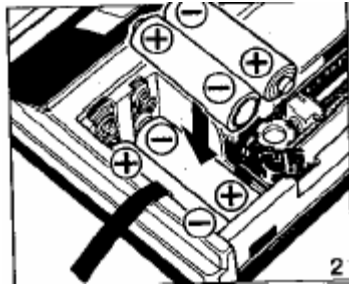
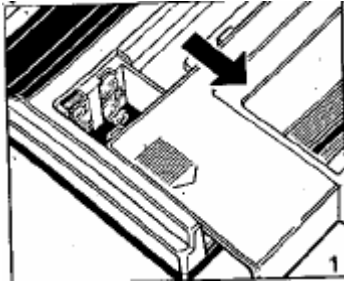
- 1) The edge of the paper should be positioned as shown in figure (1).
- 2) Lift the paper deflection hook and insert the edge of the paper into the slit as far as possible.
- 3) Turn the power switch ON.
- 4) Press the paper feed key to advance the paper (fig.2).
- 5) Slightly pull apart both arms of the paper holder and insert the printing paper.
 - Keep the paper deflection hook raised at this time. Once the printing paper is set in the holder, flip this hook down on to the roll of printing paper.
- 6) Insert the edge of the printing paper in the slot at the back of the calculator and then press the paper feed key to advance the paper.

Replacement

Low battery voltage may cause printing defects, random paper advances or the inability of the “C” key to clear the overflow.

Printer Error Lock

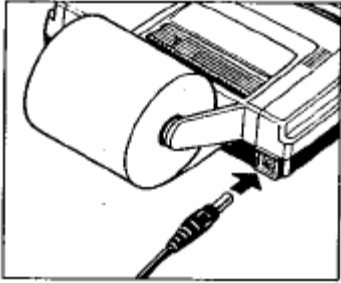
When the printer is on, low battery voltage may cause printer error lock. In this case, depress the “C” key to clear the error lock, and the calculator can be used as an ordinary display model. However, the batteries should be replaced as soon as possible.



4. How to Load and Replace Dry Batteries

Loading

- 1) Remove the cover of the battery chamber on the bottom of the P20-DX by sliding it in the direction of the arrow.
- 2) Load four new penlight batteries (size AA) into the battery chamber as illustrated, by inserting the (-) end first.
- 3) Replace the cover.
 - The P20-DX will not operate if batteries are loaded improperly.



5. Canon AC Adapter AD-11

- 1) Use only the Canon AC Adapter AD-11 with the P20-DX.
- 2) Turn the Power Switch of the calculator OFF before connecting or disconnecting the AC Adapter.

6. Overflow Interlock Function

“E” lights up on the display and a dash line is printed in the following overflow cases:

1. When the result or the memory contents exceeds 10 digits to the left of the decimal point.

Example 1: Overflow of addition and subtraction

Operation	Display	Printout
9999999999 +	9999999999	999999999999 +
00999999999 +		999999999999 +
	E1.9999999999	-----
		199999999998 *

Example 2: Overflow of multiplication and division

Operation	Display	Printout
12345 X	12345.	12345 x
56789 X	701060205.	56789 x
2000 =	E140.2120410	-----
(Correct answer: 1402120410000)		140.2120410 *

2, When dividing by “0”.

3. Buffer Register Overflow

When the sequential operation is made using more than 9 keys; depress the “CE” key or the “C” key to clear the overflow.

4. If the batteries are weak, the “CE” or “C” key may not unlock the keyboard. In this case, change all four batteries at the same time, or use the AC Adapter AD-11.

7. Calculation Examples

	Example	Decimal Point Indicator	Operation	Printout
Addition and Subtraction	$2 + 3 + 4 = (9)$	2	2 + 3 + 4 + *	2•00 + 3•00 + 4•00 = 003 9•00
	$3 - 5 = (-2)$	2	3 - 5 = *	3•00 + 5•00 - 002 -2•00 *
Repetitive Entry of Result	$\begin{array}{r} 2.5 \\ + 2.5 \\ \hline (5.0) \\ 5 \\ 5 \\ - 5 \\ \hline (5.0) \end{array}$	2	2.5 + + * + + -	2•50 + 2•50 + 002 5•00 * 5•00 + 5•00 + 5•00 - 003 5•00 *

Printing of Intermediate Result	$ \begin{array}{r} 123 \\ 456 \\ + 789 \\ \hline (1,368) \\ \\ \underline{-321} \\ (1,047) \end{array} $	2	$ \begin{array}{r} 123 + \\ 456 + \\ 789 + \\ \diamond \\ \\ 321 - \\ * \end{array} $	$ \begin{array}{r} 123 \cdot 00 + \\ 456 \cdot 00 + \\ 789 \cdot 00 = \\ 003 \\ 1368 \cdot 00 \diamond \\ \\ 1368 \cdot 00 - \\ 321 \cdot 00 = \\ 004 \\ 1047 \cdot 00 * \end{array} $
Add-Mode Calculation	$ \begin{array}{r} \$12.55 \\ 15.75 \\ 4.20 \\ -10.45 \\ \underline{- 5.30} \\ (\$16.75) \end{array} $	+	$ \begin{array}{r} 1255 + \\ 1575 + \\ 420 + \\ 1045 - \\ 530 - \\ * \end{array} $	$ \begin{array}{r} 12 \cdot 55 + \\ 15 \cdot 75 + \\ 4 \cdot 20 + \\ 10 \cdot 45 - \\ 5 \cdot 30 - \\ 005 \\ 16 \cdot 75 * \end{array} $
Multiplication	$ \begin{array}{r} 123 \times 456 \\ =(56,088) \end{array} $	3	$ \begin{array}{r} 123 \times \\ 456 = \end{array} $	$ \begin{array}{r} 123 \cdot \times \\ 456 \cdot = \\ 56088 \cdot 000 * \end{array} $

	$(-2) \times 3 = (-6)$	3	“C” 2 – x 3 =	2•000 – –2•000 x 3• = –6•000 *
Division	$456 \div 123 = (3,707)$	3	$456 \div$ $123 =$	$456 \div$ $123 \cdot =$ $3 \cdot 707 *$
	$(-365) \div 7 = (-52,143)$ $= (-52.143)$	3	“C” 365 – ÷ 7 =	365•000 – –365•000 ÷ 7• = –52•143 *
Chain Multiplication and Division	1) $2.5 \times 6.24 \times 8.365$ $= (1320.494)$	(F)	2.5 x 6.24 x 8.365 =	2•5 x 6•24 x 8•365 = 130•494 *
	2) $5,000 \div 3.21 \times 9.87$ $= (15,373.83)$	(F)	5000 ÷ 3.21 x 9.87 =	5000• ÷ 3•21 x 9•87 = 15373•83176 *

	3) $7,894 \times 567 \div 0.032$ $= (139,871,812.5)$	(F)	$7894 \times$ $567 \div$ $.032 =$	$7894 \cdot \times$ $567 \cdot \div$ $0 \cdot 032 =$ $139871812 \cdot 5 *$
Mixed Calculation	$(2 + 3) \times 4 - 5 = (15)$	2	$2 +$ $3 \times$ $4 =$ $+$ $5 -$ $*$	$2 \cdot 00 +$ $3 \cdot \times$ $4 \cdot =$ $12 \cdot 00 *$ $12 \cdot 00 +$ $5 \cdot 00 -$ 003 $9 \cdot 00 *$
Sum and Difference of Products	$1,500 \times 40 = (60,000)$ $1,200 \times 30 = (36,000)$ <u>$-) 1,000 \div 20 = (50)$</u>	2	$1500 \times$ $40 =$ $+$ $1200 \times$ $30 =$ $+$ $1000 \div$ $20 =$	$1500 \cdot \times$ $40 \cdot =$ $60000 \cdot 00 *$ $60000 \cdot 00 +$ $1200 \cdot \times$ $30 \cdot =$ $36000 \cdot 00 *$ $36000 \cdot 00 +$

			$1000 \div 20 = 50$ $50 \times 00 = 003$ $95950 \times 00 = 003$
Multiplication by a Constant $300 \times 2,145 = (643,500)$ $300 \times 4,950.6 = (1,485,180)$ $300 \times 3,784.38 = (1,135,314)$	2	$300 \times 2145 = 643500$ $4950.6 = 1485180$ $3784.38 = 1135314$	$300 \times 2145 = 643500$ $4950.6 = 1485180$ $3784.38 = 1135314$
Division by a Constant $31,750 \div 500 = (63.50)$ $54,236 \div 500 = (108.47)$ $876.12 \div 500 = (1.75)$	2	$31750 \div 500 = 63.50$ $54236 = 108.47$ $876.12 = 1.75$	$31750 \div 500 = 63.50$ $54236 = 108.47$ $876.12 = 1.75$

Raising to a Power	$3^3=(27)$	3	$3 \times$ $= (3^2)$ $= (3^3)$	$3 \cdot \times$ $3 \cdot =$ $9 \cdot 000 *$ $9 \cdot 000 =$ $27 \cdot 000 *$
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Reciprocal Calculation	1) $\frac{1}{8} = (0.125)$	3	$8 \div$ $=$ $=$	$8 \cdot \div$ $8 \cdot =$ $1 \cdot 000 *$ $1 \cdot 000 =$ $0 \cdot 125 *$
	2) $\frac{1}{\frac{1.98}{4}} = (2.020)$	F	$1.98 \div$ $4 =$ \div $=$	$1 \cdot 98 \div$ $4 =$ $0 \cdot 495 *$ $0 \cdot 495 \div$ $0 \cdot 495 =$ $1 \cdot 000 *$

			=	$1 \cdot 000 =$ $2 \cdot 020 *$
Percent Calculation 17% of 2,350	$2,350 \times \frac{17}{100}$ $= (399.5)$	2	$2350 \times$ 17%	$2350 \cdot \times$ $17 \cdot \%$ $399 \cdot 50 *$
To find what percent 456 is of 789	$\frac{456}{789} \times 100$ $= (57.79)$	2	$456 \div$ 789%	$456 \cdot \div$ $789 \cdot \%$ $57 \cdot 79 *$
Add-on Calculation To increase 2,000 by 12%	$2,000 + 2,000 \times \frac{12}{100}$ $= (2,240)$	2	$2000 \times$ 12%	$2000 \cdot \times$ $12 \cdot \%$ $240 \cdot 00 *$ $+$ $2240 \cdot 00 + \%$
Discount Calculation To discount 2,000 by 12%	$2,000 - 2,000 \times \frac{12}{100}$ $= (1,760)$	2	$2000 \times$ 12% $-$	$2000 \cdot \times$ $12 \cdot \%$ $240 \cdot 00 *$ $1760 \cdot 00 - \%$

Constant Percent Calculation	$300 \times 3\% = (9)$ $300 \times 4\% = (12)$ $300 \times 5\% = (15)$	2	$300 \times$ 3% 4% 5%	$300 \cdot \times$ $3 \cdot \%$ $9 \cdot 00 *$ $4 \cdot \%$ $12 \cdot 00 *$ $5 \cdot \%$ $15 \cdot 00 *$
Constant Add-On Calculation	$123 + 123 \times 12\%$ $= (137.76)$ $123 + 123 \times 15\%$ $= (141.45)$ $123 + 123 \times 17\%$ $= (143.91)$	2	$123 \times$ 12% $+$ $15 =$ $+$ 17% $+$	$123 \cdot \times$ $12 \cdot \%$ $14 \cdot 76 *$ $137 \cdot 76 +\%$ $15 \cdot \%$ $18 \cdot 45 *$ $141 \cdot 45 +\%$ $17 \cdot \%$ $20 \cdot 91 *$ $143 \cdot 91 +\%$

Memory Calculation

Sum and Difference of Products $234 \times 12 = (2,916)$ $576 \times 25 = (14,400)$ $387 \times 45 = (17,415)$ <hr/> $(34,731)$ $-) 456 \times 32 = (14,592)$ $(20,139)$	2	$243 \times$ $12 \text{ M}(+=)$ $576 \times$ $25 \text{ M}(+=)$ $387 \times$ $45 \text{ M}(\diamond=)$ $\text{M}\diamond$ $456 \times$ $32 \text{ M}(=-)$ M^*	$243 \bullet \times$ $12 \bullet =$ $2916 \bullet 00 \text{M}+$ $576 \bullet \times$ $25 \bullet =$ $14400 \bullet 00 \text{M}+$ $387 \bullet \times$ $45 \bullet =$ $17415 \bullet 00 \text{M}+$ $34731 \bullet 00 \text{M}\diamond$ $456 \bullet \times$ $14592 \bullet 00 \text{M}-$ $20139 \bullet 00 \text{M}^*$
--	---	---	---

<p>Sum and Difference of Quotients</p> $ \begin{array}{r} 14,377 \div 0.78 \\ = (18,432.05) \\ 3,761 \div 0.86 \\ = (4,373.26) \\ 7,536 \div 0.64 \\ = (11,775) \\ \hline (34,580.31) \\ -4,268 \div 0.58 \\ = (7,358.62) \\ \hline (27,221.69) \end{array} $	2	$ \begin{array}{r} 14377 \div \\ .78 \text{ M}(+=) \\ \\ 3761 \div \\ .86 \text{ M}(+=) \\ \\ 7538 \div \\ .64 \text{ M}(\diamond=) \\ \\ \text{M}\diamond \\ 4268 \div \\ .58 \text{ M}(-=) \\ \\ \text{M}^* \end{array} $	$ \begin{array}{r} 14377 \bullet \div \\ 0 \bullet 78 = \\ 18432 \bullet 05 \text{ M}+ \\ \\ 3761 \bullet \div \\ 0 \bullet 86 = \\ 4373 \bullet 26 \text{ M}+ \\ \\ 7536 \bullet \div \\ 0 \bullet 64 = \\ 11775 \bullet 00 \text{ M}+ \\ \\ 34580 \bullet 31 \text{ M}\diamond \\ 4268 \bullet \div \\ 0 \bullet 58 = \\ 7358 \bullet 62 \text{ M}- \\ \\ 27221 \bullet 69 \text{ M}^* \end{array} $
--	---	--	---

Calculation of Group and Grand Totals	$ \begin{array}{r} 125 \\ \underline{78} \\ (203) \end{array} $	2	$ \begin{array}{r} 125 + \\ 78 + \\ * \\ 002 \\ 203 \cdot 00 * \\ \\ M(+)= \\ 75 + \\ 103 + \\ * \\ 002 \\ 178 \cdot 00 * \\ \\ M(+)= \\ 64 + \\ 70 + \\ * \\ 002 \\ 134 \cdot 00 * \\ \\ M(+)= \\ M* \\ 134 \cdot 00M+ \\ 515 \cdot 00M* \end{array} $	$ \begin{array}{r} 125 \cdot 00 + \\ 78 \cdot 00 = \\ 002 \\ 203 \cdot 00 * \\ \\ 203 \cdot 00M+ \\ 75 \cdot 00 + \\ 103 \cdot 00 + \\ 002 \\ 178 \cdot 00 * \\ \\ 178 \cdot 00M+ \\ 64 \cdot + \\ 70 \cdot + \\ 002 \\ 134 \cdot 00 * \\ \\ 134 \cdot 00M+ \\ 515 \cdot 00M* \end{array} $
	$ \begin{array}{r} 75 \\ \underline{103} \\ (178) \end{array} $			
	$ \begin{array}{r} 64 \\ \underline{70} \\ (134) \end{array} $			
	$ \begin{array}{r} \text{====} \\ (515) \end{array} $			

Respective Totals of Data in Groups	Qty	Amount(\$)	2		
	23	3,200		23 +	23•00 +
	34	4,300		3200 M(+=)	3200•00 M+
	(57)	(7,500)		34 +	34•00 +
	41	1,400		4300 M(+=)	4300•00 M+
	52	2,500		◇	002
				M◇	57•00 ◇
					7500•00 M◇
				41 +	41•00 +
	(150)	(11,400)		1400 M(+=)	1400•00 M+
				52 +	52•00 +
				2500 M(+=)	2500•00 M+
				*	004
					150•00 *
				M*	11400•00 M*

Item Count Function

Item Counting	1	1,860	2	1860 +	1860•00 +
	2	1,420		1420 +	1420•00 +
	3	2,380		2380 +	2380•00 +
	4	2,200		2200 +	2200•00 +
	(4)	(7,860)		◇	004 7860•00 ◇
	5	4,552		4552 +	4552•00 +
	6	3,660		3660 +	3660•00 +
	7	7,432		7432 +	7432•00 +
	8	8,500		8500 +	8500•00 +
				*	008 32004•00 *

Applied Calculation

Composition Ratio Calculation			2	123 +	123•00 +
		%		456 +	456•00 +
A	123	(8.99)		789 +	789•00 +
B	456	(33.33)		123 ÷	123•00 +
C	789	(57.68)			003
	(1,368)	(100.00)		*	1368•00 *

$$A = \frac{123}{1,368} \times 100 = (8.99)$$

$$B = \frac{456}{1,368} \times 100 = (33.33)$$

$$C = \frac{789}{1,368} \times 100 = (57.68)$$

%(±)	1368•00 % 8•99 *
M(+)= 456 %(±)	8•99 M+ 456• % 33•33 *
456 =	456• = 33•33
M(+)= 789 %(±)	33•33M+ 789• % 57•68 *
M+ M *	57•68M+ 100•00M*

Proportional Allotment
To allot a budget of
\$1,548 to three branch
offices according to
their sales

Store	Sales	Budget
A	147	(294)
B	258	(516)
C	369	(738)
	(774)	1,548

2

147 +	147•00 +
258 +	258•00 +
369 +	369•00 +
*	003
	774•00 *

			$M(+)=$ $1548 \div$ $*$	$774 \cdot 00M+$ $1548 \cdot \div$ $774 \cdot 00M*$
			x $147 =$	$774 \cdot 00 x$ $147 \cdot =$ $294 \cdot 00 *$
			$258 =$	$258 \cdot =$ $516 \cdot 00 *$
			$369 =$	$369 \cdot =$ $738 \cdot 00 *$

<p>Compound Interest Calculation</p> <p>Principal: \$1,000</p> <p>Time Deposit: 6 Years</p> <p>Annual Interest Rate: 7.5%</p>	$1,000 \times (1 + 0.075)$ $= 1,543.301524$	(F)	$1.075 \times$ $=$ $=$ $=$	$1 \cdot 075 \times$ $1 \cdot 075 =$ $1 \cdot 155625 *$ $1 \cdot 155625 =$ $1 \cdot 242296875 *$ $1 \cdot 242296875 =$ $1 \cdot 33546914 *$
---	---	-----	----------------------------	---

=

$$= \frac{1 \cdot 33546914}{1 \cdot 435629325} = *$$

$$= \frac{1 \cdot 435629325}{1 \cdot 543301524} = *$$

$$1000 = \frac{x \cdot 1 \cdot 543301524}{1000 \cdot x} = \frac{1543 \cdot 301524}{*}$$

Checking Invoices	Amount: \$ 13.50	+	1350 +	13•50 +
	<u>125.00</u>		12500 =	125•00 =
	(138.50)		*	002
				138•50 *
-10% Discount:	13.85		x	138•50 x
+5% Tax:	6.23		10 %(±)	10• %
Freight:	<u>1.95</u>			13•85 *
Net:	(\$132.83)		-	124•65-%
			x	124•65 x
			5 %(±)	5• %
				6•23 *
			+	130•88 +%
			+	130•88 +
			195 +	1•95 +
			*	132•83 *

Calculation Examples for Effective Use of Display and Printouts

Example			Setting	Operation	Printout
Checkbook Balance			+	50000 +	500•00 +
				25525 –	255•25 –
				13379 –	133•79 –
				11000 +	110•00 –
				5000 –	50•00 +
				1000 –	10•00 –
				–	10•00 =
					007
					30•96 *

Specifications

Usable temperature: 0°C to 40°C (32°F to 104°F)

Dimensions: 142mm(Wide) x 208mm (Long) x 38mm (High)

Weight: 488g (1 lb. 1 oz)

Printing Paper: Width 57-58mm, Maximum diameter 30mm
(Subject to change without notice)

Battery Life

1. With continuous use

High performance manganese batteries prints about 7,000 lines

Alkaline manganese batteries.....prints about 14,000 lines

2. With display use only

High performance manganese batteriesup to 10,000 hours

Alkaline manganese batteries.....up to 15,000 hours

- This calculator conforms to EEC directive 82/499/EEC relating to radio interference.

FCC REGULATIONS

This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to a radio and television reception. It has been type tested and found to comply with the limit for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on. The user is encouraged to try to correct the interference by one or more of the following measures:

- reorient the receiving antenna
- relocate the calculator with respect to the receiver
- move the calculator away from the receiver
- plug the calculator into a different outlet so that the calculator and receiver are on different branch circuits

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful: "How to Identify and Resolve Radio-TV Interference Problems". This booklet is available from the U.S. Government Printing Office, Washington, DC 20402, Stock No. 004-000-00345-4.

Radio Interference Regulations

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

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