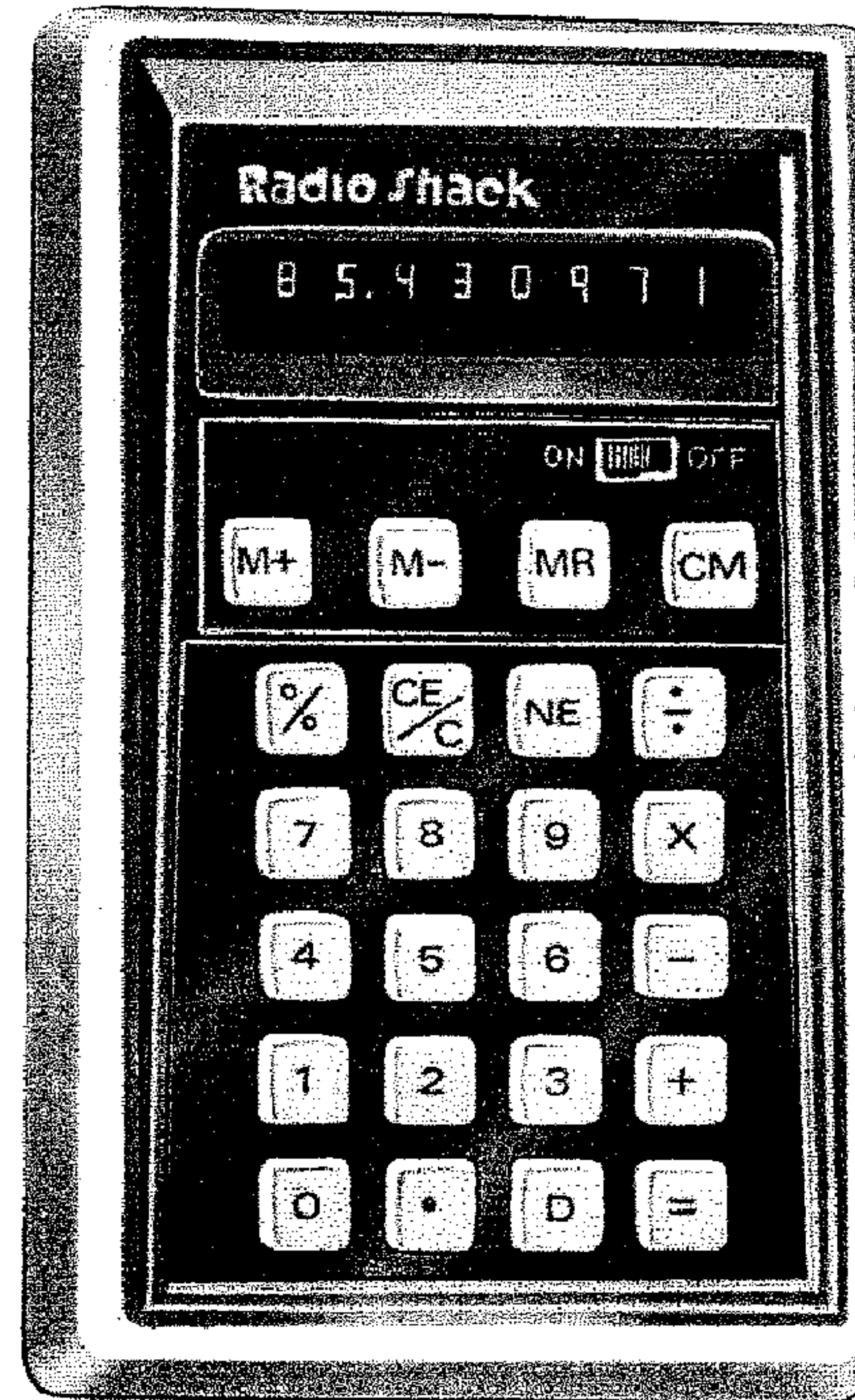



Radio Shack

Operating Instructions
RADIO SHACK EC-300
ELECTRONIC CALCULATOR
CAT. NO. 63-603



RADIO SHACK  A TANDY CORPORATION COMPANY
FORT WORTH, TEXAS 76107

ABBREVIATED INSTRUCTIONS

For complete details, refer to the Manual

POWER: FOR AC OPERATION, CONNECT AC ADAPTER/CHARGER TO JACK AND TURN ON. FOR BATTERY OPERATION, JUST TURN ON.

DISPLAY INDICATORS: "J" = ANSWER MORE THAN EIGHT DIGITS NEGATIVE
"L" = ANSWER MORE THAN EIGHT DIGITS POSITIVE
"-." = NEGATIVE ENTRY OR BALANCE
"L" = INFORMATION IN MEMORY

CALCULATIONS: ALWAYS PRESS $\frac{CE}{C}$ BEFORE CALCULATING. USE $\frac{CE}{C}$ TO CLEAR ENTRY MISTAKE (DOES NOT CLEAR MEMORY). PRESS $\frac{CM}{C}$ TO CLEAR MEMORY.

A + B = C, ENTER A, $\frac{+}{C}$, ENTER B, $\frac{=}{C}$; READ C

A - B = C, ENTER A, $\frac{-}{C}$, ENTER B, $\frac{=}{C}$; READ C

A X B = C, ENTER A, $\frac{x}{C}$, ENTER B, $\frac{=}{C}$; READ C

(-A) X B = C, ENTER $\frac{NE}{C}$, A, $\frac{x}{C}$, ENTER B, $\frac{=}{C}$; READ C

A ÷ B = C, ENTER A, $\frac{\div}{C}$, ENTER B, $\frac{=}{C}$; READ C

A% of B = C, ENTER B, $\frac{x}{C}$, ENTER A, $\frac{\%}{C}$, $\frac{=}{C}$; READ C

A - B% of A = C, ENTER A, $\frac{M+}{C}$, ENTER B, $\frac{\%}{C}$, $\frac{x}{C}$, ENTER A, $\frac{=}{C}$, $\frac{M-}{C}$, $\frac{MR}{C}$, $\frac{=}{C}$; READ C

$\frac{M+}{C}$ ADDS DISPLAY TO MEMORY


$\frac{M-}{C}$ SUBTRACTS DISPLAY FROM MEMORY

$\frac{MR}{C}$ RECALLS NUMBER IN MEMORY TO DISPLAY (MEMORY UNCHANGED)

$\frac{CM}{C}$ CLEAR ALL INFO FROM MEMORY (MEMORY = 0)

WHEN DISPLAY DISAPPEARS AFTER APPROXIMATELY 30 SECONDS OF NON-USE, PRESS $\frac{D}{C}$ TO REDISPLAY.

CHARGING: CONNECT AC ADAPTER/CHARGER TO JACK: BATTERIES FULLY CHARGE IN ABOUT 12 HOURS.

RADIO SHACK  A TANDY CORPORATION COMPANY
FORT WORTH, TEXAS 76107
RADIO SHACK MODEL EC-300

SERIAL NO.

A2

MADE IN U.S.A.

Your Model EC300 Electronic Memory Calculator incorporates the very latest solid-state design and engineering. The calculator circuitry is a single-chip MOS/LSI (Metal-Oxide-Semiconductor/Large-Scale-Integration) with the equivalent of over 6000 transistors plus other parts!


This calculator is a portable AC/DC unit which offers the computation capability usually found only in the top of the line desk units. Over and above the normal four functions, the machine has memory capability which allows immediate answers to be stored for later use. The unit also incorporates a key for percent computations. Chain and constant operations are immediately available without the normal switch merely by selecting the sequence of data inputs.


- Eight digit four function portable calculator plus memory and automatic constant.
- Algebraic logic keyboard (+, -, =) allows calculations to be made in the order that they are normally written.
- Addition, subtraction, multiplication, and division.
- Added memory feature with four key operation allowing totals to be made from a series of calculations.
- Percent operation allows direct computation of percentage and sales tax.
- Full floating decimal point operation allows answers to eight digit accuracy.

- Automatic chain or constant operation is achieved by the sequence of data entered. No need to switch the calculator to only one mode at a time.
- Clear entry/clear, and clear memory keys allow selective clearing of the stored data.
- Efficient light emitting diode display instantly displays up to eight digits of the answer plus sign, calculation overflow, memory content indicator, and memory overflow.
- Automatic time-out to conserve battery life. Display turns off automatically, except for a minus sign in the fifth digit position, approximately 30 seconds after last entry. Press "D" key to restore full display.
- MOS/LSI logic circuitry for portability and reliability.
- Automatic clearance with power turn-on.
- Exclusive 3-way power:
 1. Use AC power (AC adaptor/charger included)
 2. Or, use regular penlight batteries
 3. Or, use rechargeable NiCd penlight batteries with AC adaptor/charger.


Internal battery-selector switch protects non-rechargeable batteries from inadvertent charge.

OPERATING NOTES

After you turn the EC300 "ON", always press  before performing any calculations. If you turn the unit-on and press keys at the same time, one of two things may occur:

1. The "zero suppression" feature may be defeated resulting in a 00000000 display, which cannot be cleared with the  key.
2. Numbers may be displayed incorrectly.

To correct 1, turn off and on.

To correct 2, press  key.

PREPARING FOR OPERATION

Your electronic calculator is designed to operate either from internal batteries, or from AC power using the AC Adapter/Charger supplied.

Four type "AA" penlight cells are required for battery operation. Remove the base of the calculator (remove two screws) and snap the batteries into the battery holder — TAKE CARE TO OBSERVE CORRECT BATTERY POLARITY.

We recommend you purchase four Radio Shack Nickel-Cadmium rechargeable batteries (Catalog No. 23-125). You can recharge these batteries hundreds of times using the AC Adapter/Charger. Or, use triple-life NOVA Cells (Catalog No. 23-453).

CAUTION: BE CERTAIN THAT THE BATTERY SELECTOR SWITCH, LOCATED IN THE BATTERY HOLDER, IS SET IN THE CORRECT POSITION AS MARKED ON BATTERY HOLDER.

Improper switch setting may damage your calculator.

Use **rechargeable NiCd** batteries, positions for NiCd batteries only. Use **all other** batteries position for *all other* batteries.



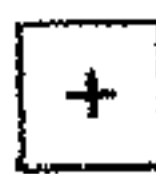

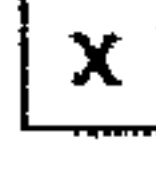

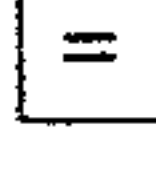
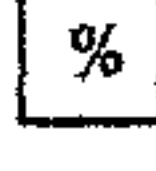
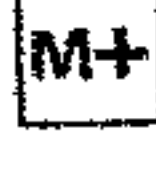
Replace base and fasten with the two screws.






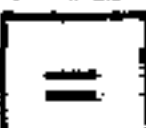



Recharging (or battery replacement) will be required when the LED display intensity has become extinguished or is too dim to read easily. For recharging, plug the AC Adapter/Charger into the jack located on the back edge of the unit and the other end into a source of 120 volts, 60 Hz AC power. Recharging will function when the AC Adapter/Charger is plugged in as just stated in the OFF position.


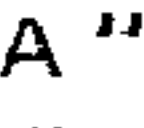



You will obtain three to six hours of calculating time before recharging is required for NiCd cells (or replacement of regular "AA" penlight cells is necessary). To fully recharge NiCd leave adaptor attached overnight.

For AC operation, merely plug the AC Adapter/Charger into calculator and AC outlet as described above and turn calculator to the ON position. Batteries will also charge during this operating cycle. It is not necessary to insert batteries for AC operation.

THE KEYBOARD

On-Off Switch		Turn the calculator "ON" and "OFF" with this switch.
Numeral Key		Press to enter digits on visual display.
Decimal Key		Press to enter decimal point at appropriate position in the display.
Add Key		Press to instruct the calculator to ADD the previous number or result to the following number.
Subtraction Key		Press to instruct the calculator to subtract the following number from the previous number or result.
Multiplication Key		Press to instruct the calculator to multiply the previous number or result by the following number.
Division Key		Press to instruct the calculator to divide the previous number or result by the following number.
Equal Key		Press to instruct the calculator to complete the previously entered operation to provide the desired calculation result.
Percent Key		Press to compute direct percent of a total in the register.
Memory Plus Key		Press to add the display register information to the memory bank needed for later or further calculations.

- Memory Minus Key**  Press to subtract the display register information from the memory bank needed for later or further calculations.
- Memory Recall Key**  Press to transfer information stored in the memory bank to the display register (memory is left unchanged).
- Memory Clear Key**  Press to clear all data in the memory bank.
- Clear Entry/ Clear Key**  A single depression of this key clears the previous entry if pressed prior to depressing the  key or clears the entire machine after pressing the  key, (the end of the problem). Prior to pressing the  key two depressions of the  key are required to clear the machine. In no case is the memory cleared or otherwise affected by this key.
- Display Recall Key**  The display will automatically turn off after 30 seconds of non-use, to conserve battery life. Press this key to recall the display. There is no need to press this key if you merely wish to continue your calculations, for the entries remain in the memory and register.

- Negative Entry Key**  Press to change the sign on an entry to multiply or divide by a negative number.
- Power On Indication** A zero appears at the right end of the display when power switch is in the ON position.
- Minus Sign** Appears directly to the left of the display when entry or calculation is negative.
- Calculation Overflow** A "  " appears at left side of the display when the calculation is more than 8 digits positive. The eight most significant digits to the correct answer will appear, but the decimal point must be mentally moved eight positions to the right for correct number of digits in the correct answer.
- For example:
 99999999×99 will display
 98.999999
- The eight most significant digits to the correct answer are 9899999900.
- A  appears at the left side of the display when the calculation memory overflows.
- A  appears at the left side of the display when the calculator memory overflows with a negative no.

An E appears at left side of the display when the calculation is more than 8 digits negative.

A small " \sqcup " appears at left side of the display when information has been placed in the memory.

EXAMPLES OF ADDITION

To Calculate $123 + 456$

Operation	Display Will Be:
Press $\boxed{\text{CE/C}}$	0.
Enter 123	123.
Press $\boxed{+}$	123.
Enter 456	456.
Press $\boxed{=}$ Answer	579.

To calculate $.31 + 2 + 19.9$

Operation	Display Will Be:
Press $\boxed{\text{CE/C}}$	0.
Enter .31	0.31
Press $\boxed{+}$	0.31
Enter 2	2.
Press $\boxed{+}$	2.31
Enter 19.9	19.9
Press $\boxed{=}$ Answer	22.21

EXAMPLES OF SUBTRACTION

To calculate $47.52 - 12.02$

Operation	Display Will Be:
Press $\boxed{\text{CE/C}}$	0.
Enter 47.52	47.52
Press $\boxed{-}$	47.52
Enter 12.02	12.02
Press $\boxed{=}$ Answer	35.50

To Calculate $7 + 13 - 1.43 - 24$

Operation	Display Will Be:
Press $\boxed{\text{CE/C}}$	0.
Enter 7	7.
Press $\boxed{+}$	7.
Enter 13	13.
Press $\boxed{-}$	20.
Enter 1.43	1.43
Press $\boxed{-}$	18.57
Enter 24	24.
Press $\boxed{=}$ Answer	-5.43

EXAMPLES OF MULTIPLICATION

To calculate 14.6×0.52

Operation	Display Will Be:
Press $\boxed{\text{CE/C}}$	0.
Enter 14.6	14.6
Press $\boxed{\times}$	14.6
Enter .52	0.52
Press $\boxed{=}$ Answer	7.592

To calculate $12 \times 3.6 \times 2.1$

Operation	Display Will Be:
Press $\frac{CE}{C}$	0.
Enter 12	12.
Press \times	12.
Enter 3.6	3.6
Touch \times	43.2
Enter 2.1	2.1
Press $=$ Answer	90.72

EXAMPLES OF DIVISION

To calculate $45.55 \div 1.45$

Operation	Display Will Be:
Press $\frac{CE}{C}$	0.
Enter 45.55	45.55
Press \div	45.55
Enter 1.45	1.45
Press $=$ Answer	31.413793

To calculate $256 \div 16 \div 4$

Operation	Display Will Be:
Press $\frac{CE}{C}$	0.
Enter 256	256.
Press \div	256.
Enter 16	16.
Press \div	16.
Enter 4	4.
Press $=$ Answer	4.

COMPLEX CALCULATIONS

To calculate $12.2 \times (-0.91) \div (-9.68)$

Operation	Display Will Be:
Press $\frac{CE}{C}$	0.
Enter 12.2	12.2
Press \times	12.2
Press $\frac{NE}{C}$	-0.
Enter .91	-0.91
Press \div	-11.102
Press $\frac{NE}{C}$	-0.
Enter 9.68	-9.68
Press $=$ Answer	1.1469008

To calculate the following:

$$\frac{(0.96 + 5.66 - 4.032) \times 3.14}{1.6 \times 9} - 14.7 =$$

Operation	Display Will Be:
Press $\frac{CE}{C}$	0.
Enter .96	0.96
Press $+$	0.96
Enter 5.66	5.66
Press $-$	6.62
Enter 4.032	4.032
Press \times	2.588
Enter 3.14	3.14
Press \div	8.12632
Enter 1.6	1.6
Press \div	5.07895

PERCENT CALCULATIONS

Model EC300 is equipped with an additional function ($\%$) key. This operation allows the operator to calculate % and also the added capability of direct calculation of "add on - discount". Percent is operational after a sequence of "A" X "B", where "A" is any number and "B" is in percent. The percent $\%$ key performs the operation and displays the result. A plus $+$ key address following the percent $\%$ key adds the previous result to "A". A minus $-$ key address following the percent $\%$ key subtracts the previous result from "A".

Example: 200 X 15%

Operation:	Display Will Be:
Press $\frac{CE}{C}$	0.
Enter 200	200.
Press \times	200.
Enter 15	15.
Press $\%$ Answer	30.

EXAMPLE OF PERCENT DISCOUNT:

An article selling for \$4.95 is on sale at 25% discount. What is the new selling price?

$$(4.95 - 25\% \text{ of } 4.95)$$

Operation:	Display Will Be:
Press $\frac{CE}{C}$	0.
Enter 4.95	4.95
Press $-$	4.95
Enter 25	25.
Press $\%$	1.2375
Press $=$	3.7125

EXAMPLES OF SELLING PRICE PLUS SALES TAX:

An article is purchased for 12.95 not including 5% sales tax. What is the total cost to buyer?

Operation:	Display Will Be:
Press $\frac{CM}{C}$	0.
Press $\frac{CE}{C}$	0.
Enter 12.95	12.95
Press $+$	12.95
Enter 5	5.
Press $\%$	0.6475
Press $=$ Answer	13.5975
\$ Answer	\$13.60

PROBLEM: LIST PRICE, LESS 10% DISCOUNT, PLUS 6% SALES TAX:

$$15.95 - (10\% \text{ of } 15.95) + 6\% \text{ of } (15.95 - 10\% \text{ of } 15.95)$$

Operation:	Display Will Be:
Press $\frac{CE}{C}$	0.
Enter 15.95	15.95
Press $-$	15.95
Enter 10	40.
Press $\%$	15.95
Press $=$	14.355

Press +		14.355
Enter 6		6.
Press %		0.8613
Press =	Answer	15.2163
	Rounding to	15.22

NOTE: Additional 25% discount can be obtained by pressing **=** key, e.g. minus another 25% = 2.475, etc. The same function can be performed for "add-on percentages" or "percent mark-up".

CALCULATIONS UTILIZING THE MEMORY CAPABILITY OF THE EC300

Your Radio Shack EC300 incorporates a complete Memory Bank to enable you to solve complex problems beyond those normally solved on standard four function calculators. After practice you will learn to get the maximum potential from your calculator. The following examples explain the use of the Memory and the meaning of the Memory Address Keys.

Problems:
$$\frac{(25 \times 3) - (5 \times 5)}{5 \times 2}$$

Operation:	Display Will Be:
Press CE/C	0.
Press CM	0.
Enter 25	25.
Press X	25.
Enter 3	3.

Press =	75.
Press M+	75. (Product now in Memory)
Enter 5	5.
Press X	5.
Enter 5	25.
Press =	25.
Press M-	25. (Second Product subtracted from Memory)
Press MR	50. (New data in Memory)
Press ÷	50.
Enter 5	5.
Press ÷	10.
Enter 2	2.
Press =	Answer 5.

GRAND TOTAL ADDITION WITH SUBTOTALS

EXAMPLE:

1) $246.7 + 113.0 - 59.53 + 432.7$	=	732.87
2) $567.09 - 103.5 - 498.5 - 73.25$	=	-108.16
3) $104.0 + 99.95 - 2.85 + 232.73$	=	433.83
	GRAND TOTAL	= 1058.54

Operation:	Display Will Be:
Press CM	0.
Press CE/C	0.
Enter 246.7	246.7
Press +	246.7
Enter 113.0	113.0
Press -	359.7
Enter 59.53	59.53
Press +	300.17
Enter 432.7	432.7
Press = 1st Subtotal Answer	732.87
Press M+	└ 732.87
Enter 567.09	└ 567.09
Press -	└ 567.09
Enter 103.5	└ 103.5
Press -	└ 463.59
Enter 498.5	└ 498.5
Press -	└ -34.91
Enter 73.25	└ 73.25
Press = 2nd Subtotal Answer	└ -108.16
Press M+	└ -108.16
Enter 104	└ 104
Press +	└ 104
Enter 99.95	└ 99.95
Press -	└ 203.95
Enter 2.85	└ 2.85
Press +	└ 201.10
Enter 232.73	└ 232.73

Press =	3rd Subtotal Answer	└ 433.83
Press M+		└ 433.83
Press MR	Grand Total Answer	└ 1058.54

MULTIPLICATION AND DIVISION USING THE MEMORY:

EXAMPLE: 4 X 11.99 = \$47.96
6 X 2.97 = 17.82
12 X 0.98 = 11.76
 \$77.54

Operation:	Display Will Be:
Press CM	0.
Press CE/C	0.
Enter 4	4.
Press X	4.
Enter 11.99	11.99
Press =	└ 47.96
Press M+	└ 47.96
Enter 6	└ 6.
Press X	└ 6.
Enter 2.97	└ 2.97
Press =	└ 17.82
Press M+	└ 17.82
Enter 12	└ 12.
Press X	└ 12.
Enter .98	└ 0.98

Press $\boxed{=}$ \hookrightarrow 11.76
 Press $\boxed{M+}$ \hookrightarrow 11.76
 Press \boxed{MR} \hookrightarrow 77.54

EXAMPLE:

$$\left[\frac{36 \times 3}{2} + \frac{12 \times 2}{3} - \frac{15 \times 5}{4} \right] \times 4 = 173.$$

Operation:	Display Will Be:
Press \boxed{CM}	0.
Press $\boxed{CE/C}$	0.
Enter 36	36.
Press $\boxed{\times}$	36.
Enter 3	3.
Press $\boxed{\div}$	108.
Enter 2	2.
Press $\boxed{=}$	\hookrightarrow 54.
Press $\boxed{M+}$	\hookrightarrow 54.
Enter 12	\hookrightarrow 12.
Press $\boxed{\times}$	\hookrightarrow 12.
Enter 2	\hookrightarrow 2.
Press $\boxed{\div}$	\hookrightarrow 24.
Enter 3	\hookrightarrow 3.
Press $\boxed{=}$	\hookrightarrow 8.
Press $\boxed{M+}$	\hookrightarrow 8.
Enter 15	\hookrightarrow 15.
Press $\boxed{\times}$	\hookrightarrow 15.
Enter 5	\hookrightarrow 5.

Press $\boxed{\div}$	\hookrightarrow 75.
Enter 4	\hookrightarrow 4.
Press $\boxed{=}$	\hookrightarrow 18.75
Press $\boxed{M-}$	\hookrightarrow 18.75
Press \boxed{MR}	\hookrightarrow 43.25
Press $\boxed{\times}$	\hookrightarrow 43.25
Enter 4	\hookrightarrow 4.
Press $\boxed{=}$	Answer \hookrightarrow 173.

DIVISION BY A SUM

EXAMPLE: $\frac{1500}{15 + 25 + 35} = 20$

Operation:	Display Will Be:
Press \boxed{CM}	0.
Press $\boxed{CE/C}$	0.
Enter 15	15.
Press $\boxed{M+}$	\hookrightarrow 15.
Enter 25	\hookrightarrow 25.
Press $\boxed{M+}$	\hookrightarrow 25.
Enter 35	\hookrightarrow 35.
Press $\boxed{M+}$	\hookrightarrow 35.
Enter 1500	\hookrightarrow 1500.
Press $\boxed{\div}$	\hookrightarrow 1500.
Press \boxed{MR}	\hookrightarrow 75.
Press $\boxed{=}$	Answer \hookrightarrow 20.

PRODUCT OF SUMS

EXAMPLE: $(2 + 3) \times (4 + 5) \times (6 \times 7) = 585.$

Operation:	Display Will Be:
Press CM	0.
Press CE/C	0.
Enter 2	2.
Press +	2.
Enter 3	3.
Press =	5.
Press M+	5.
Enter 4	4.
Press +	4.
Enter 5	5.
Press X	9.
Press MR	5.
Press =	45.
Press CM	45.
Press M+	45.
Enter 6	6.
Press +	6.
Enter 7	7.
Press X	13.
Press MR	45.
Press =	Answer 585.

RECIPROCAL

To convert a number to the reciprocal use the following:

EXAMPLE: The reciprocal of 9.7 is 0.1030927

Operation:	Display Will Be:
Enter 9.7	9.7
Press 1/x	9.7
Press =	1.
Press =	0.1030927

SQUARE ROOTS

A square root may be calculated using your EC300 with the following method: Use the formula

$$TR_N = \frac{1}{2} \left[\frac{N}{TR_O} + TR_O \right]$$

N = Number for which you seek a square root

TR_N = New "trial" square root

TR_O = Old "trial" square root

EXAMPLE: $\sqrt{12} = 3.4641016$

Press **CE/C** twice to clear machine

Choose an arbitrary trial square root, for example let's use 3.

Operation:

1. Enter 3
2. Press
3. Press
4. Press
5. Press
6. Press
7. Enter 12
8. Press
9. Test —If the answer is not between 1.0000005 and 0.9999995 continue at step 10; if it is, Press to obtain root.
10. Enter 12
11. Press
12. Press
13. Press
14. Press
15. Press
16. Enter 2
17. Press
18. Repeat steps 2 thru 17.

WARRANTY

This electronic calculator from Radio Shack is warranted to the original purchaser for a period of one year from the original purchase date — under normal use and service — against defective materials or workmanship.

Defective parts will be repaired, adjusted, and/or replaced at no charge when the calculator is returned prepaid to Radio Shack Calculator Service Center, shown below.

The warranty is void if the calculator has been visibly damaged by accident, misuse, or if the calculator has been serviced or modified by any person other than Radio Shack Calculator Service Center, or if the inside seal is broken.

This warranty contains the entire obligation of Radio Shack and no other warranties expressed, implied, or statutory are given.

The warranty is void unless the Purchase Registration Card has been properly completed and mailed to Radio Shack within 15 days of purchase.

DETACH AND MAIL CARD TO:

**EC-300 SERVICE CENTER
P.O. BOX 5012, M/S 10
DALLAS, TEXAS 75222**

Date of Purchase: _____

Serial Number: _____

KEEP THIS CARD IN A SAFE PLACE