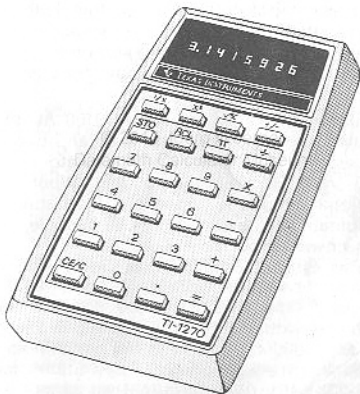# Texas Instruments
electronic calculator with memory
TI-1270

OPERATING INSTRUCTIONS

Your portable memory calculator from Texas Instruments is designed to provide years of reliable service in solving your arithmetic and algebraic problems.

Battery Information—A standard 9-volt **alkaline** battery is recommended for maximum calculating time. If another type of battery must be used, remove it immediately after it is discharged or when storing the calculator to prevent possible damage from leakage. The battery compartment is accessible by inserting a small coin in the slot on the back of the calculator and prying open the cover of the compartment.

Optional AC Adapter—The AC9180 Adapter is available from your dealer as an optional accessory to operate the calculator from 115 V/60 Hz electrical outlets. When the optional adapter is connected, the battery is automatically disconnected to conserve battery power for portable operation.

For assistance with your calculator, write the Consumer Relations Dept., P.O. Box 22283, Dallas, Texas 75222. Or, call 800-527-4980 (toll-free within all contiguous states except Texas) or 800-492-4298 (toll-free within Texas). If outside the contiguous United States, call 214-238-5461. (We regret that we cannot accept collect calls at this number.) For repair related inquiries only, you may also call our Service Facility toll-free at 800-858-1802 (800-692-1353 within Texas).

Arithmetic Calculations

The algebraic entry system of the calculator allows a problem to be entered in the same order it is written. The calculator will operate with up to 8 digits (7 digits for negative numbers and decimal fractions) and indicates negative values by displaying a minus sign to the left of the number.

Decimal Alignment — In addition or subtraction problems, the calculator will display as many decimal places in a result as are contained in the entry with the most decimal places. For example, the result of the problem 1.273 − .203 is displayed as 1.070 instead of 1.07. This decimal alignment is maintained in addition and subtraction results until a number with more decimal places is entered or the calculator is cleared.

Entering Pi (π) — The constant π (3.1415926) can be displayed at any time by pressing the $\boxed{\pi}$ key. The displayed π value is automatically replaced by another entered number if an arithmetic key has not been pressed.

Clearing — The Clear-Entry/Clear key performs a clear-entry when used immediately following a number key or the $\boxed{\pi}$ key. This key clears the calculator (except memory) when used under other conditions or when pressed again after a clear entry. You can start a calculation over at any time by pressing the $\boxed{\text{CE/c}}$ key twice. See *Overflow and Error Conditions* for additional use of the $\boxed{\text{CE/c}}$ key.

The four arithmetic function keys ($+$, $-$, $\times$, $\div$) will each perform an equals operation and the calculator will display an intermediate result when used in chain calculations. The numbers in arithmetic calculation can be entered with the number keys, recalled from memory, a result of the π key or a result of using a special function key with any displayed number.

Addition — The add $+$ key adds the *last* entered number or intermediate result to the number displayed when the *next* arithmetic function key or equals key is pressed.

Example: 14 + 16.25 = 30.25

Enter	Press	Display
14	$+$	14.
16.25	$=$	30.25

Subtraction — The subtract $-$ key subtracts the number displayed when the next arithmetic function key or equals key is pressed from the *last* entered number or intermediate result.

Example: 6 − 7.854 = −1.854

Enter	Press	Display
6	$-$	6.
7.854	$=$	−1.854

Multiplication — The multiply $\times$ key multiplies the *last* entered number or intermediate result times the number displayed when the *next* arithmetic function key or equals key is pressed.

3

Example: 27.2 × 18 = 489.6

Enter	Press	Display
27.2	[×]	27.2
18	[=]	489.6

Division— The divide [÷] key divides the *last* entered number or intermediate result by the number displayed when the next arithmetic function key or equals key is pressed.

Example: 5 ÷ 3 = 1.6666666

Enter	Press	Display
5	[÷]	5.
3	[=]	1.6666666

Entering Negative Numbers— The Change-Sign [+/−] key permits changing the sign of the displayed number from positive to negative or vice versa. This key may be used immediately before or after a number entry; however, when used immediately after +, −, × or ÷, the minus sign displayed applies to the next entered number— not to the number or intermediate result displayed.

Example: 5 × (−4) = −20

Enter	Press	Display
5	[×] [+/−]	−5.
4	[=]	−20.
or 5	[×]	5.
4	[+/−] [=]	−20.

Note that only seven digits can be displayed with a negative number. If the +/− key is used when eight digits are displayed, one of two things will happen:

1) If there are any digits to the right of the decimal point, the right-most digit is lost and the remaining digits and decimal point shift one place to the right.

2) If all eight digits are to the left of the decimal point, the calculator will flash the eight-digit number indicating an error condition (see *Overflow and Error Conditions*).

Memory Operation

The calculator has two memory keys: a STO key to store the displayed number in memory and a RCL key to recall the stored number to the display. The STO key may be used at any time without affecting the calculation in progress or the displayed number. Each operation of the STO key discards the previous number in memory before storing the displayed number. A number will remain in memory until the STO key is used to store a new number or until the calculator is turned off. The CE/c key *does not* affect the memory. Pressing the RCL key will cause the displayed number to be replaced with a number identical to the number in memory.

A displayed number that has been recalled from memory can be replaced with a new number by using the number keys. Using the CE/c key after STO or RCL will clear the calculator (except for memory).

Special Functions

The reciprocal $1/x$ key, square x^2 key and square-root $\sqrt{x}$ key are special-function keys which are not dependent upon the arithmetic or equal keys. These keys may be used with an entered number, intermediate result or final result without affecting the arithmetic calculation in progress.

Reciprocals — The reciprocal $1/x$ key calculates the reciprocal of the displayed number (that is, divides the displayed number into 1). The reciprocal of zero is invalid and will cause a flashing zero in the display. See *Overflow and Error Conditions*.

Example: $\frac{1}{6} = 0.1666666$

Enter	Press	Display
6	$1/x$	0.1666666

Example: $1/(3.1 + 4.3) = 0.1351351$

Enter	Press	Display
3.1	$+$	3.1
4.3	$=$ $1/x$	0.1351351

Squares — The square x^2 key calculates the square of the displayed number (that is, multiplies the displayed number by itself).

Example: $(4.2)^2 = 17.64$

Enter	Press	Display
4.2	x^2	17.64

6

Square Roots — The square-root $\boxed{\sqrt{x}}$ key calculates the square root of the displayed number (that is, finds the number which multiplied by itself, equals the number displayed). The square root of a negative number is invalid and will cause a flashing display. The flashing number displayed is the square root of the number disregarding the minus sign. See *Overflow and Error Conditions*.

Example: $\sqrt{37} = 6.0827625$

Enter	Press	Display
37	$\boxed{\sqrt{x}}$	6.0827625

Example: $\sqrt{3^2 + 4^2} = 5$

Enter	Press	Display
3	$\boxed{x^2}$ $\boxed{+}$	9.
4	$\boxed{x^2}$ $\boxed{=}$	25.
	$\boxed{\sqrt{x}}$	5.

Note that the calculator is limited to 8 digits (7 digits for negative numbers); therefore, truncation errors may appear in the right-most digits if the special function keys are used repetitively or successively.

Error Correction

Number-entry errors may be corrected by pressing the $\boxed{CE/C}$ key and entering the correct number.

Arithmetic function entry errors may be corrected by pressing the correct function before the next number entry is made.

Overflow and Error Conditions
(Flashing Display)

An overflow or error condition is indicated by a flashing display and is caused by:

1. The result of a calculation has more than 8 digits (7 digits for negative results) to the left of the decimal point.

2. The +/− key is pressed with 8 digits displayed to the left of the decimal point.

3. The 1/x key is pressed when 0 is displayed.

4. The √x key is pressed when a negative number is displayed.

5. Dividing a number by zero.

The CE/c key is the only operable key when the display is flashing. Press the CE/c key one time* to stop the flashing display and retain a result (a number entry is cleared). Press the CE/c key a second time* to clear the displayed number. Press the CE/c key a third time* to clear all calculations in progress.

When a calculation overflow (condition 1) occurs, the display will show the correct result and the decimal point will appear eight places to the left of its correct position. To determine the correct position of the decimal point, mentally move it eight places to the right, adding zeros as required.

*Hold key down momentarily.

SAMPLE PROBLEMS

Sum of Products

Example: $(4 \times 11.99) + (12 \times 0.98) = 59.72$

Enter	Press	Display
4	$\boxed{\times}$	4.
11.99	$\boxed{=}$ $\boxed{\text{STO}}$	47.96
12	$\boxed{\times}$	12.
.98	$\boxed{+}$	11.76
	$\boxed{\text{RCL}}$ $\boxed{=}$	59.72

Product of Sums

Example: $(2 + 3) \times (4 + 5) = 45$

Enter	Press	Display
2	$\boxed{+}$	2.
3	$\boxed{=}$ $\boxed{\text{STO}}$	5.
4	$\boxed{+}$	4.
5	$\boxed{\times}$	9.
	$\boxed{\text{RCL}}$ $\boxed{=}$	45.

Radicals

Example: $\sqrt{(6.2 + 5.3)^2} \times \sqrt{20.25} = 24.395183$

Enter	Press	Display
6.2	$\boxed{+}$	6.2
5.3	$\boxed{=}$	11.5
	$\boxed{x^2}$ $\boxed{\times}$	132.25
20.25	$\boxed{\sqrt{x}}$ $\boxed{=}$	595.125
	$\boxed{\sqrt{x}}$	24.395183

Sum of Quotients

Example: $\frac{1.98}{4} + \frac{2.27}{2} - \frac{4.98}{8} = 1.0075$

Enter	Press	Display
1.98	÷	1.98
4	= STO	0.495
2.27	÷	2.27
2	+ RCL	0.495
	= STO	1.63
4.98	÷	4.98
8	= +/−	−0.6225
	+ RCL =	1.0075

Area of a Circle

Example: $\pi \times (6)^2 = 113.09733$

Enter	Press	Display
	π ×	3.1415926
6	x^2	36.
	=	113.09733

Volume of a Sphere

Example: $\frac{4}{3} \times \pi \times (6.8)^3 = 1317.0896$

Enter	Press	Display
6.8	STO x^2	46.24
	× RCL ×	314.432
4	÷	1257.728
3	× π =	1317.0896

10

Powers and Roots

You can easily calculate any power or root which is a multiple of 2 — that is, the fourth, eighth, sixteenth power or root — by using the $\boxed{x^2}$ or $\boxed{\sqrt{x}}$ key.

	To Calculate	Enter	Press
	N^4	N	$\boxed{x^2}$ (2 times)
Powers	N^8	N	$\boxed{x^2}$ (3 times)
	N^{16}	N	$\boxed{x^2}$ (4 times)

	To Calculate	Enter	Press
	$\sqrt[4]{N}$	N	$\boxed{\sqrt{x}}$ (2 times)
Roots	$\sqrt[8]{N}$	N	$\boxed{\sqrt{x}}$ (3 times)
	$\sqrt[16]{N}$	N	$\boxed{\sqrt{x}}$ (4 times)

To calculate other integer powers, enter and store the number. Use the $\boxed{x^2}$ key to obtain the nearest multiple of two power that is less than the power desired. Then multiply the result by the number in memory as many times as necessary to make up the difference in powers.

Example: $5^6 = 15625$

Enter	Press	Display
5	$\boxed{STO}$ $\boxed{x^2}$ $\boxed{x^2}$	625.
	$\boxed{\times}$ $\boxed{RCL}$ $\boxed{\times}$ $\boxed{RCL}$ $\boxed{=}$	15625.

The first two $\boxed{x^2}$ keystrokes calculate 5^4, $\boxed{\times}$ $\boxed{RCL}$ calculates 5^5 and $\boxed{\times}$ $\boxed{RCL}$ $\boxed{=}$ completes the calculation of 5^6.

Power and Root Approximation

The x^2 and $\sqrt{x}$ keys can also be used to approximate the $\sqrt[y]{y}$ function. The result will be within 0.05% when the values of x and y are both between 1 and 10 or 10 and 100. Other values may be used if less accuracy is tolerable. Only positive values of x and y are valid.

$x\sqrt{y}$ key sequence:

y $\sqrt{x}$ (11 times) $-$ 1 $\div$ × $+$ 1 $=$
x^2 (11 times)

Example: $\sqrt[5.5]{8} = 1.4594801$

Enter	Press	Display
8	$\sqrt{x}$ (11 times)	1.0010158
	$-$	1.0010158
1	$\div$	0.0010158
5.5	$+$	0.0001846
1	$=$	1.0001846
	x^2 (11 times)	1.4592806

A y^x problem may be solved using a similar method; however, the accuracy is less than stated for the above root sequence.

y^x key sequence:

y $\sqrt{x}$ (11 times) $-$ 1 $\times$ x $+$ 1 $=$
x^2 (11 times)

12

SERVICE INFORMATION

In Case of Difficulty

1. If using the adapter (AC9180), check for power at AC outlet and proper insertion of plug into calculator.

   CAUTION: Use of other than the AC9180 adapter may apply improper voltage to your calculator and may cause damage.

2. Check to be sure ON/OFF switch is ON.

3. If display fails to light on battery operation, check for improperly inserted or discharged batteries. See *Battery Information* on page 1.

4. Review operating instructions to be certain calculations are performed correctly.

If none of the above procedures corrects the difficulty, return the **calculator (and adapter) PREPAID** and **INSURED** to the applicable SERVICE FACILITY listed on the next page. Texas Instruments cannot assume any responsibility for loss or damage to uninsured shipments. **A copy of the sales receipt or other proof of purchase date MUST be enclosed with the calculator to establish the warranty status of the unit (please do not send the original document).**

Please include information on the difficulty experienced with the calculator along with your name, address, city, state, and zip code. The shipment should be carefully packaged and protected against shock and rough handling.

For out-of-warranty service, carefully pack your calculator, enclose $6.00 for service and handling, and include your complete name, address, and zip code. Send prepaid and insured to the applicable service facility.

Calculator Exchange Centers

If your calculator requires service, instead of returning the unit to a service facility for repair, you may elect to exchange the calculator for a factory-rebuilt calculator of the SAME MODEL at one of the exchange centers which have been established across the United States. Please call Consumer Relations (see page 1) for further details and the location of the nearest exchange center.

Texas Instruments Consumer Service Facilities

Texas Instruments Service Facility
P.O. Box 2500
Lubbock, Texas 79408

Texas Instruments Service Facility
41 Shelley Road
Richmond Hill, Ontario, Canada

Consumers in California and Oregon may contact the following
Texas Instruments offices for additional assistance or information.

Texas Instruments Consumer Service
78 Town and Country
Orange, California 92668
(714) 547-2556

Texas Instruments Consumer Service
10700 Southwest Beaverton Highway
Park Plaza West, Suite 111
Beaverton, Oregon 97005
(503) 643-6758

NOTE: The P.O. box number listed for the Texas Service Facility is for United States parcel post shipments only. If you desire to use another carrier, please call Consumer Relations (page 1) for the proper shipping address.

14

NINETY-DAY LIMITED WARRANTY

This electronic calculator from Texas Instruments is warranted to the original purchaser for a period of ninety (90) days from the original purchase date—under normal use and service—against defective materials or workmanship. **ANY IMPLIED WARRANTIES ARE ALSO LIMITED IN DURATION TO THE NINETY-DAY PERIOD FROM THE ORIGINAL PURCHASE DATE.**

This warranty is void if: (1) the calculator has been damaged by accident or unreasonable use, neglect, improper service or other causes not arising out of defects in material or workmanship, (2) the serial number has been altered or defaced. **TEXAS INSTRUMENTS SHALL NOT BE LIABLE FOR LOSS OF USE OF THE CALCULATOR OR OTHER INCIDENTAL OR CONSEQUENTIAL COSTS, EXPENSES OR DAMAGES INCURRED BY THE PURCHASER.**

During the warranty period your calculator will either be repaired or it will be replaced with a reconditioned model of equivalent quality (at manufacturer's option) without charge to the purchaser, when returned prepaid and insured, with proof of purchase date, to a Texas Instruments service facility. In the event of replacement with a reconditioned model, the replacement unit will continue the warranty of the original calculator or 90 days, whichever is longer. **UNITS RETURNED WITHOUT PROOF OF PURCHASE DATE WILL BE REPAIRED AT THE SERVICE RATES IN EFFECT AT THE TIME OF RETURN.**

TEXAS INSTRUMENTS

INCORPORATED
DALLAS, TEXAS