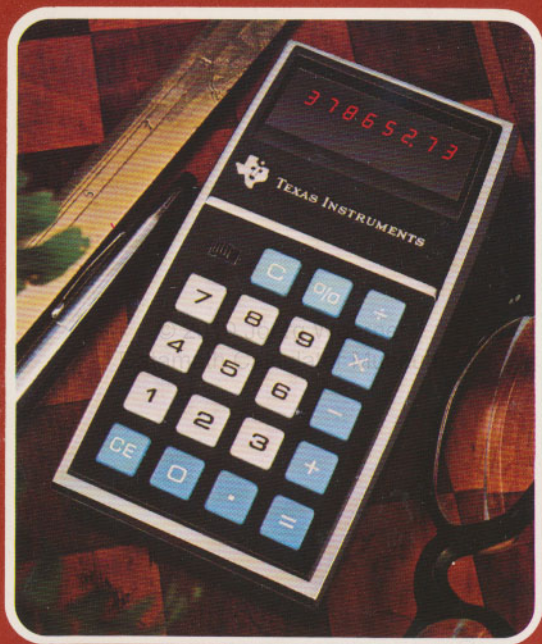


# Texas Instruments

electronic calculator  
TI-1500



## TABLE OF CONTENTS

	Page
INTRODUCTION . . . . .	1
Features . . . . .	1
OPERATING INSTRUCTIONS . . . . .	2
Switches . . . . .	2
Keys . . . . .	2
Display . . . . .	3
Battery Considerations . . . . .	4
OPERATING EXAMPLES . . . . .	6
Addition and Subtraction . . . . .	6
Repeat Addition and Subtraction . . . . .	7
Multiplication and Division . . . . .	7
Using the <span style="border: 1px solid black; padding: 0 2px;">CE</span> Key . . . . .	8
Using the Automatic Constant . . . . .	9
Multiplication and Division by a Constant . . . . .	9
Addition and Subtraction of a Constant . . . . .	10
Calculations With Positive and Negative Numbers . . . . .	10
Performing Mixed Calculations . . . . .	11
Using the Percent Key . . . . .	11
SAMPLE PROBLEMS . . . . .	13
IN CASE OF DIFFICULTY . . . . .	18

**NOTE: Read battery considerations on pages 1 and 4 carefully before operating your calculator.**

### Toll-Free Telephone Assistance

For assistance with your TI-1500 calculator, call one of the following toll-free numbers if necessary:

800-527-4980 (within all continental states except Texas)  
800-492-4298 (within Texas)


See page 17 and back cover for further information on service.

## INTRODUCTION

The TI-1500 Calculator from Texas Instruments features five function (add, subtract, multiply, divide, percent) operation and automatic constant for multiplication, division, addition and subtraction. With the percent key, problems such as taxes, discounts, and percentage calculations are easily solved.

Designed with state-of-the-art MOS/LSI integrated circuits and constructed with quality components, the TI-1500 should provide years of reliable service.



### Features

**Percent Key** —  key permits easy calculation of percentages, taxes, discounts, and other similar problems.

**Automatic Constant** — Addition, subtraction, multiplication, or division with a constant number is automatic. Does not affect normal chain or mixed calculations.

**Easy to Operate** — Press the keys in the same order as the problem is written.

**Fully Portable** — Weighs less than 8 ounces, fits neatly in pocket, briefcase or purse.

**Repeat Add and Subtract** — Repeated depression of the  or  key permits multiple additions or subtractions of the last number entered.

**Reliability** — Solid state components, integrated circuits, and a light emitting diode display provide reliable operation.

**Rechargeable Batteries** — 2 "AA" nickel-cadmium rechargeable batteries provide 4-6 hours of portable power when fully charged. Batteries can be fully recharged overnight (10 hours) with the power switch in the OFF position using the AC 9140 Adapter/Charger included with your calculator.

**AC Operation** — After charging with switch off for one minute the calculator can be used while the batteries are charging.

## OPERATING INSTRUCTIONS

### Switches

**On Switch** — Located on top left side of the keyboard. Turns calculator on and off.

### Keys

$\boxed{0}$  —  $\boxed{9}$  **Keys** — Enters numbers (limit 8 digits).

$\boxed{\cdot}$  **Key** — Enters a decimal point (only the first decimal entry is observed).

$\boxed{+}$  **Key** — Instructs the calculator to add the previous number or result to the following number. Repeated depressions continue to add the last number entered to the result.

$\boxed{-}$  **Key** — Instructs the calculator to subtract the following number from the previous number or result. Assigns a negative sign to the following number when used after a  $\boxed{\times}$  or  $\boxed{\div}$  key. Repeated depressions continue to subtract the last number entered from the result.

$\boxed{\times}$  **Key** — Instructs the calculator to multiply the previous number or result by the following number.

$\boxed{\div}$  **Key** — Instructs the calculator to divide the previous number or result by the following number.

$\boxed{=}$  **Key** — Instructs the calculator to complete the previously entered operations to provide the desired calculation result.

**C** Key — Clears (erases) information in calculator and display and sets calculator to zero for start of new problem.

**CE** Key — Clears the calculator and display of the last keyboard entry unless a function ( **+** , **-** , **x** , **÷** , **%** ) key has been pressed.

**%** Key — Used to find percentages of numbers.

When used with the **x** or **+** keys, the **%** key computes add-on percentages, such as taxes, and totals. With the **-** key, the **%** key computes discounts and totals.

When the **%** key is used in division, results are expressed as a percentage. For example, the key sequence 125 **÷** 500 **%** gives 25% as the answer. The display will indicate 25. as the answer.

**Display** © 2010 Joerg Woerner  
Datamath Calculator Museum

**Power On Indication** — The presence of digits in the display is indication that power is on.

**Minus Sign** — Appears at the left of displayed number to indicate negative numbers.

**Decimal Point** — Automatically appears to the right of any number entered unless positioned in another sequence by use of **.** key. A zero will precede the decimal for decimal numbers.

**Calculation Overflow Indication** — When a calculated result is more than eight digits, the sign **|** will appear at the left of the display and the calculator will not accept any key instructions except the **C** or **CE** key. To determine the correct placement of the decimal, move the decimal point 8 places to the right. Pressing the **c** key will clear the number and the overflow condition from the calculator. Pressing the **CE** key will clear only

the overflow condition. The displayed number will remain for further calculation and the decimal position will remain shifted.

**Decimal Alignment** — In addition or subtraction problems the TI-1500 will display in a result as many decimal places 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 until the  $\boxed{C}$  key is used to reset the decimal to the far right position or another problem with more decimal places is entered.

## Battery Considerations

**Calculator Operation** — Before portable use, the batteries should be given a full charge of 10 hours with the switch in the OFF position. If during portable operation the display appears dim, calculations may be continued using the AC 9140 Adapter/Charger. Connect the Adapter/Charger to the calculator and charge for at least 1 minute with the power switch in the OFF position. Then turn calculator on and continue calculations with the Adapter/Charger connected to the calculator.

**Low Battery Indication** — When the batteries are low the display will appear dim. Recharge the batteries when this occurs. Rechargeable batteries will lose their charge when not used and after two or three months will require recharge before extended portable use.

**Periodic Recharging** — For maximum rechargeable battery life, it is recommended that you operate the calculator as a portable and recharge the nickel cadmium batteries periodically. Although the calculator will operate indefinitely attached to the AC Adapter/Charger, the nickel cadmium batteries can lose their storage capability if they are not allowed to discharge occasionally.

**WARNING:** Avoid leaving the calculator on for several hours after the display appears dim. This will result in fully discharged batteries and may damage their ability to be recharged. This condition requires that the batteries be charged for an extended period of time (see page 18, paragraph 3).

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## OPERATING EXAMPLES

The following examples show how to operate the TI-1500 and should be followed to become familiar with how the calculator works.

Before turning the calculator on, charge the batteries for one minute. The calculator can be used while the batteries are charging, but it is recommended that the batteries be charged for 10 hours before portable operation.

Place ON-OFF switch in the ON position, press the C key, and a 0. should appear in the display.

### Addition and Subtraction

Example:  $4.23 + 4 = 8.23$

Enter	Press	Display
4.23	<span style="border: 1px solid black; padding: 0 2px;">+</span>	4.23
4	<span style="border: 1px solid black; padding: 0 2px;">=</span>	8.23

Example:  $6 - 1.854 = 4.146$

Enter	Press	Display
6	<span style="border: 1px solid black; padding: 0 2px;">-</span>	6.
1.854	<span style="border: 1px solid black; padding: 0 2px;">=</span>	4.146

Example:  $12.324 - 7 + 1.6 = 6.924$

Enter	Press	Display
12.324	<span style="border: 1px solid black; padding: 0 2px;">-</span>	12.324
7	<span style="border: 1px solid black; padding: 0 2px;">+</span>	5.324
1.6	<span style="border: 1px solid black; padding: 0 2px;">=</span>	6.924



## Repeat Addition and Subtraction

Example:  $2 + 3 + 3 + 3 = 11$

Enter	Press	Display
	<input type="button" value="C"/>	
2	<input type="button" value="+"/>	2.
3	<input type="button" value="+"/>	5.
	<input type="button" value="+"/>	8.
	<input "="" type="button" value="="/>	11.

Example:  $21 - 4 - 4 - 4 - 4 = 5$

Enter	Press	Display
21	<input type="button" value="-"/>	21.
4	<input type="button" value="-"/>	17.
	<input type="button" value="-"/>	13.
	<input type="button" value="-"/>	9.
	<input "="" type="button" value="="/>	5.

## Multiplication and Division

Example:  $27.2 \times 18 = 489.6$

Enter	Press	Display
27.2	<input type="button" value="x"/>	27.2
18	<input "="" type="button" value="="/>	489.6

Example:  $12 \div 5.2 = 2.3076923$

Enter	Press	Display
12	<input type="button" value="÷"/>	12.
5.2	<input "="" type="button" value="="/>	2.3076923

Example:  $(4 \times 7.3) \div 2 = 14.6$

Enter	Press	Display
4	$\times$	4.
7.3	$\div$	29.2
2	$=$	14.6

## Using the $\boxed{\text{CE}}$ Key

When an incorrect number is entered in a calculation, the  $\boxed{\text{CE}}$  (clear entry) key is used to clear the display so the correct number can be entered and the calculation continued.

Example:  $5 + 3 = 8$

Enter	Press	Display	Remarks
	$\boxed{\text{C}}$		
5	$\boxed{+}$	5.	
4		4.	4 pressed incorrectly
	$\boxed{\text{CE}}$	0.	Clear entry
3	$\boxed{=}$	8.	Enter correct number and complete calculation

When a calculation overflow results, calculations may be continued by pressing the  $\boxed{\text{CE}}$  key. The decimal point in the final displayed result must be shifted mentally 8 places to the right to obtain the correct answer.

Example:

$$\begin{array}{r}
 85,000,000 \\
 + 25,150,000 \\
 \hline
 110,150,000 \\
 \times 12.5 \\
 \hline
 1,376,875,000
 \end{array}$$

Enter	Press	Display	Remarks
	<input type="button" value="C"/>		
85000000	<input type="button" value="+"/>	85000000.	
25150000	<input type="button" value="x"/>	∠ 1.1015000	Correct decimal position is 8 places to the right
	<input type="button" value="CE"/>	1.1015000	Clear overflow condition
12.5	<input type="button" value="="/>	13.76875	Mentally shift the decimal point eight places to the right for correct answer

## Using the Automatic Constant

The constant feature of the TI-1500 allows multiplication or division of a series of numbers by one number and addition or subtraction of a constant number to or from a series of numbers.

A number entered before the  key in multiplication, after the  key in division, after the  key in addition, and after the  key in subtraction becomes the constant.

## Multiplication and Division by a Constant

Example:  $4 \times 5 = 20$ ,  $4 \times 6 = 24$ ,  $4 \times 7 = 28$

Enter	Press	Display
4	<input type="button" value="x"/>	4.
5	<input type="button" value="="/>	20.
6	<input type="button" value="="/>	24.
7	<input type="button" value="="/>	28.

Example:  $12 \div 2 = 6$ ,  $20 \div 2 = 10$ ,  $44 \div 2 = 22$

Enter	Press	Display
12	$\div$	12.
2	$=$	6.
20	$=$	10.
44	$=$	22.

## Addition and Subtraction of a Constant

Example:  $3 + 5 = 8$ ,  $9 + 5 = 14$ ,  $91 + 5 = 96$

Enter	Press	Display
	C	
3	$+$	3.
5	$=$	8.
9	$=$	14.
91	$=$	96.

Example:  $8 - 6 = 2$ ,  $25 - 6 = 19$ ,  $3 - 6 = -3$

Enter	Press	Display
8	$-$	8.
6	$=$	2.
25	$=$	19.
3	$=$	-3.

## Calculations With Positive and Negative Numbers

When performing multiplication or division, a negative value is assigned to a number by pressing the  $-$  key before entering the number.

Example:  $\left( \frac{-125}{5} + 3 \right) \times (-4) = 88$

Enter	Press	Display
	$\boxed{C}$ $\boxed{-}$	
125	$\boxed{\div}$	-125.
5	$\boxed{+}$	-25.
3	$\boxed{\times}$ $\boxed{-}$	-0.
4	$\boxed{=}$	88.

NOTE: When the first number of a calculation is a negative number, the previous problem must be cleared manually by pressing the  $\boxed{C}$  key (the  $\boxed{-}$  is a function key and will not automatically clear the calculator).

## Performing Mixed Calculations

The TI-1500 can do mixed calculations — combinations of add  $\boxed{+}$ , subtract  $\boxed{-}$ , multiply  $\boxed{\times}$ , and divide  $\boxed{\div}$  very easily. Just press the keys in the same order as the problem is written.

Example:  $12 \times 13 \div 14 + 15 - 16 = 10.142857$

Enter	Press	Display
12	$\boxed{\times}$	12.
13	$\boxed{\div}$	156.
14	$\boxed{+}$	11.142857
15	$\boxed{-}$	26.142857
16	$\boxed{=}$	10.142857

## Using the Percent Key

It's easy to find percentages with the TI-1500 percent key. The following examples show how.

Example: 6% of \$1,250.00

Enter	Press	Display
1250	<input type="button" value="x"/>	1250.
6	<input type="button" value="%"/>	75.

Example: \$65.00 plus 5% tax

Enter	Press	Display	Remarks
65	<input type="button" value="+"/>	65.	
5	<input type="button" value="%"/>	3.25	Amount of tax
	<input type="button" value="="/>	68.25	Total

Example: \$85.00 less 8% discount

Enter	Press	Display	Remarks
	<input type="button" value="C"/>		
85	<input type="button" value="-"/>	85.	
8	<input type="button" value="%"/>	-6.8	Amt. of discount
	<input type="button" value="="/>	78.2	Total

Example: \$125.00 less 10% discount plus 4% tax

Enter	Press	Display	Remarks
125	<input type="button" value="-"/>	125.	
10	<input type="button" value="%"/>	-12.5	Amt. of discount
	<input type="button" value="="/> <input type="button" value="+"/>	112.5	Discounted price
4	<input type="button" value="%"/>	4.5	Amount of tax
	<input type="button" value="="/>	117.0	Total

## SAMPLE PROBLEMS

### Finding the Best Price

A 4 lb. box of laundry detergent sells for \$1.76, while a 2 1/2 lb. box sells for \$1.20. Which is the better buy?

The price per pound for the 4 lb. box =  $\frac{\$1.76}{4} = \$0.44$

Enter	Press	Display
1.76	$\div$	1.76
4	=	0.44

The price per pound for the 2 1/2 lb. box =  $\frac{\$1.20}{2.5} = \$0.48$

Enter	Press	Display
1.2	$\div$	1.2
2.5	=	0.48

The 4 lb. box is cheaper by 4 cents a pound.

The important thing to remember is to find the price per unit of measure and to compare these prices. For example, if the smaller box contains 2 lbs., 10 oz. instead of 2 1/2 lbs., you must figure the price per ounce and compare these prices on a per ounce basis. The larger box contains 4 lbs. and there are 16 ounces to a pound so the larger box contains  $4 \times 16 = 64$  ounces. Similarly, the smaller box contains  $2 \times 16 = 32$  ounces plus 10 ounces = 42 ounces.



The price per ounce for the larger box is then

$$\frac{\$1.76}{64} = \$0.0275 \text{ or } 2.75 \text{ cents per ounce}$$

Enter	Press	Display
1.76	$\div$	1.76
64	$=$	0.0275

The price per ounce for the smaller box is

$$\frac{\$1.20}{42} = \$0.0285714 \text{ or } 2.857 \text{ cents per ounce}$$

Enter	Press	Display
1.2	$\div$	1.2
42	$=$	0.0285714

The larger box is  $2.857 - 2.75 = 0.107$  cents per ounce cheaper.

## How Much Paint to Buy

To figure out how much paint to buy you need to know how much area is to be covered and how much area each gallon of paint will cover.

For example, a 10 by 12 foot room with 8' ceiling has  $8' \times 10' = 80$  square feet on each of two walls and  $8' \times 12' = 96$  square feet on each of two walls, so the total area on the walls is  $80 + 80 + 96 + 96 = 352$  square feet. There is  $10' \times 12' = 120$  square feet on the ceiling, so the total square feet to be covered is  $352 + 120 = 472$  square feet. If one gallon of paint covers 250 square feet, then you need  $\frac{472}{250} = 1.888$  gallons, and you will have to buy 2 gallons.

## Balancing the Checking Account

The bank statement says your beginning balance was \$58.63 and your final balance was \$17.33. One check for \$8.28 is still out and one deposit for \$55.00 is not shown on the statement. What should your checkbook balance be?

Enter	Press	Display	Remarks
	<input type="button" value="C"/>		
17.33	<input type="button" value="+"/>	17.33	Enter final balance
55	<input type="button" value="-"/>	72.33	Add deposit not shown and subtract check not cleared
8.28	<input type="button" value="="/>	64.05	Answer should agree with checkbook

## Figuring Miles Per Gallon

Figuring miles per gallon is easy with the TI-1500. When filling up with gas, write down the mileage. The next time you need gas, fill the car up again and write down the mileage and the amount of gasoline.

For example, if the mileage on the car is 22,532 the first fillup and is 22,689 the second fillup, and 11.2 gallons of gas are put in, the miles per gallon are figured as follows:

Enter	Press	Display	Remarks
	<input type="button" value="C"/>		
22689	<input type="button" value="-"/>	22689.	Enter 2nd fillup mileage
22532	<input type="button" value="÷"/>	157.	Subtract 1st fillup mileage.
11.2	<input type="button" value="="/>	14.017857	Divide by gallons to find miles per gallon

## Squaring a Number

The square of a number (multiplying a number by itself) can be found by pressing the  $\boxed{=}$  key after the  $\boxed{\times}$  key.

Example:  $25^2 = 625$

Enter	Press	Display
25	$\boxed{\times} \boxed{=}$	625.

## Finding Reciprocals

The reciprocal of a number (the result of dividing the number into one) is easily found.

Example:  $\frac{1}{5 + 3} = 0.125$

Enter	Press	Display
	$\boxed{C}$	
5	$\boxed{+}$	5.
3	$\boxed{+}$	8.
	$\boxed{=}$	1.
	$\boxed{=}$	0.125

Example:  $1/16 = 0.0625$

Enter	Press	Display
16	$\boxed{\div} \boxed{=} \boxed{=}$	0.0625

## Square Roots

The TI-1500 can be used to find the square root of a given number (that is, the number which multiplied by itself equals the given number). The square root is calculated using a repetitive process.

$$\sqrt{N} = 1/2 \left( \frac{N}{A_1} + A_1 \right) \approx A_2 \approx 1/2 \left( \frac{N}{A_2} + A_2 \right) = A_3$$

where  $A_1$  is an initial approximation,  $A_2$  is the calculated second approximation, and  $A_3$  is the answer.



Example:  $\sqrt{26} = 5.099$

Choose 5 as an initial approximation since  $\sqrt{25} = 5$ .

Enter	Press	Display	Remarks
26	$\div$	26.	
5	$+$	5.2	
5	$\div$	10.2	
2	$=$	5.1	2nd Approx.
26	$\div$	26.	
5.1	$+$	5.0980392	
5.1	$\div$	10.198039	Re-enter 2nd Approximation
2	$=$	5.0990195	Answer
	$\times$ $=$	25.999999	Square Answer to Check

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## In Case of Difficulty

1. Check to be sure the power switch is in the ON position. If no digits appear in the display, press the  key. If a number is displayed, but key entries or  key do not affect the display, switch the calculator OFF and then ON.
2. If no display appears or if the display appears dim, place the calculator on charge, making sure the charger is plugged into a working AC outlet. Before operating your calculator while charging, switch the calculator to OFF and charge for 1 minute. For maximum portable use, allow the calculator to charge fully (10 hours in OFF position) before using without the Adapter/Charger.
3. If the calculator has been left on for several hours after Low Battery Indication (Example: accidentally left on overnight), charge the calculator with the power switch in the OFF position for 16 hours before portable use. Or, the calculator may be used with the AC 9140 Adapter/Charger after allowing the batteries to charge with the power switch OFF for 1 hour.
4. Review the operating instructions to be certain calculations have been performed in the manner described in this book. Improper key sequences may result in incorrect calculations.

If none of the above steps corrects the difficulty, RETURN THE CALCULATOR AND THE CHARGER postpaid for repair to the Texas Instruments Consumer Service Facility. Please include a description of the difficulty you have observed as well as return information of name, address, city, state and zip code

## If You Have Questions or Need Assistance

If you have questions or need assistance with your calculator, write the Consumer Relations Department at:

**Texas Instruments Incorporated**  
**P.O. Box 22283**  
**Dallas, Texas 75222**

or call Consumer Relations at 800-527-4980 (toll-free within all continental states except Texas) or 800-492-4298 (toll-free within Texas). If outside continental United States call 214-238-5461. (We regret that we cannot accept collect calls at this number.)

## Warranty Registration

### Owner's Copy

To protect your warranty, complete and mail the attached Warranty 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.

**TI-1500**

Model No.

Serial No.

Purchase Date

## IMPORTANT

**THE WARRANTY IS VOID IF THE SERIAL NUMBER  
HAS BEEN ALTERED OR DEFACED.**





- 1 ☐ Mr.  
2 ☐ Miss  
3 ☐ Mrs.

## Warranty Registration Card

Mail within 10 days to protect your warranty

TI-1500

Owner's First Name \_\_\_\_\_ Initial \_\_\_\_\_ Last Name \_\_\_\_\_ Model No. \_\_\_\_\_ Serial No. \_\_\_\_\_ Purchase Date \_\_\_\_\_

Owner's Mailing Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Please help us in planning other useful products by providing the following information:

Was Your TI Calculator a Gift?

- 1 ☐ Yes    2 ☐ No

Where the Calculator Will Be Used  
(Check One)

- 1 ☐ Home  
2 ☐ Occupation  
3 ☐ Both

Your Occupation (Check One)

- 1 ☐ Engineer/Scientist  
2 ☐ Salesman  
3 ☐ Accountant  
4 ☐ Farmer/Rancher  
5 ☐ Student  
6 ☐ Educator  
7 ☐ Homemaker  
8 ☐ Doctor/Lawyer  
9 ☐ Banker/Financier  
10 ☐ Other (Specify) \_\_\_\_\_

Your Approximate Age

- 1 ☐ Under 18  
2 ☐ 18-24  
3 ☐ 25-34  
4 ☐ 35-54  
5 ☐ 55 and over

Your Approximate

Yearly Family Income

- 1 ☐ Under \$5000  
2 ☐ \$5,000 to \$10,000  
3 ☐ \$10,000 to \$15,000  
4 ☐ Over \$15,000

Where Purchased?

- 1 ☐ Department Store  
2 ☐ Office Equipment Dealer  
3 ☐ Mail Order  
4 ☐ Other (Specify) \_\_\_\_\_

PLACE  
STAMP  
HERE

TEXAS INSTRUMENTS INCORPORATED  
P.O. BOX 5012  
DALLAS, TEXAS 75222

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Data Path Calculator Museum

# **Texas Instruments** electronic calculator **TI-1500**

## **ONE YEAR WARRANTY**

The TI-1500 electronic calculator from Texas Instruments 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 a Texas Instruments Consumer Service Facility listed below.

The warranty is void if the calculator has been visibly damaged by accident or misuse, if the serial number has been altered or defaced, or if the calculator has been serviced or modified by any person other than a Texas Instruments Consumer Service Facility.

This warranty contains the entire obligation of Texas Instruments Incorporated and no other warranties expressed, implied, or statutory are given.

The warranty is void unless the attached Warranty Registration Card has been properly completed and mailed to Texas Instruments Incorporated within 10 days of purchase.

### **Texas Instruments Consumer Services Facilities**

#### **Mailing Address:**

**Texas Instruments Service Facility**  
P.O. Box 22283  
Dallas, Texas 75222

#### **Canadian Address:**

**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

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