Texas Instruments introduces the new generation of programmable calculators.

*With TI's revolutionary, plug-in Solid State Software™ libraries.**

* For TI Programmable 58/59.

The world's most advanced programmables. Performance. Capability. Quality. Value.

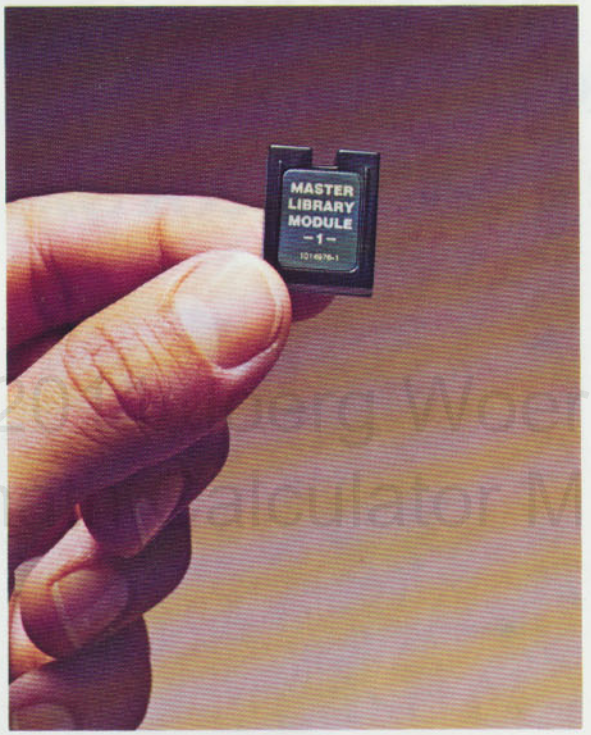
5,000 program steps at the tip of your finger.

Solid State Software.™

Featured in the new TI Programmable 58 and TI Programmable 59, TI's state-of-the-art Solid State Software libraries combine the advantages of prewritten programs with the convenience of compact, easy to use, plug-in modules. Information that once required up to 25 magnetic cards can be contained in one small module. Simply insert the desired module and access a program in seconds, with just a few keystrokes.

The Master Library Module, which is included with the TI Programmable 58 and TI Programmable 59, places 25 different programs at your command. Access any of them at the touch of a key. The Master Library gives you extended power for solving mathematical, statistical, financial, and other problems. Optional plug-in modules allow you to customize your calculator into a specialty problem solver for applied statistics, real estate and investment, surveying, aviation, and marine navigation.

Programs in the Solid State Software modules can be addressed repeatedly from the calculator's keyboard, or be inserted as subroutines in other programs developed by you.



A new dimension in micro-memory technology.

Solid State Software, the new innovation in programming versatility and power, is here today. From the leader in calculator technology, Texas Instruments.

Key programmable. Magnetic cards. Solid State Software. TI has the calculator you need. To increase your productivity. To help you move ahead.

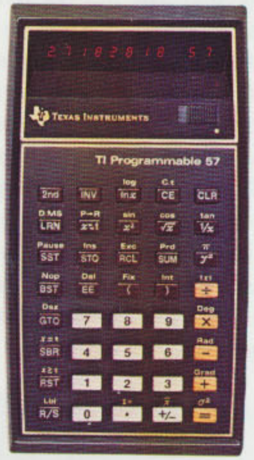
TI's new generation of programmable calculators offers a wide range of capability and performance. From the student to the advanced professional there's a TI Programmable ideally suited to your needs, and your price range.

Chances are that you're involved in tasks such as optimization, mathematical modeling, iteration, data reduction, what-if matrices, and forecasts. If you have the time you work them out. Or, you get in line for the computer, then wait. So, more often than you'd like to admit, you rely on your intuition, or make an educated guess. But you don't need to guess. You can know. Because programmables help you cope with more data, explore with more insight, far more successfully than ever before. You make better decisions, chosen from more options – better decisions founded on a broader data base. More decisions. Faster. On the spot.

And, with TI's new generation of programmables, you get the best price/performance value and the most advanced features available. Anywhere.

Programmable TI 57

The key programmable super slide rule calculator.



- Computer-like programming functions.
- 50 multi-key program steps store up to 150 keystrokes.
- 8 multi-use memories.
- AOS™ entry system. Enter problems just as you would write them.
- Advanced slide rule and statistical functions.

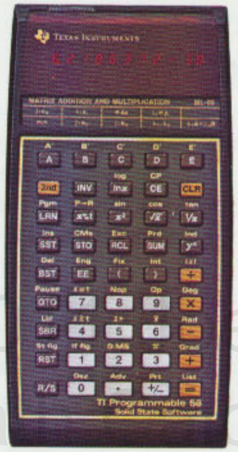
The TI Programmable 57 is a powerful slide rule calculator that you can program right from the keyboard. And it comes complete with a self-teaching guide to programming. Ideal for high school or college students, or the professional new to programming.

PC-100A.
A thermal printer, plotter.

See your program at every step. Plot data. Print out headings. The PC-100A will turn your TI Programmable 58 or 59 into a quiet, high speed printing calculator with alphanumeric and plotting capabilities.

Programmable TI 58

A powerful programmable with preprogrammed Solid State Software™ library module.



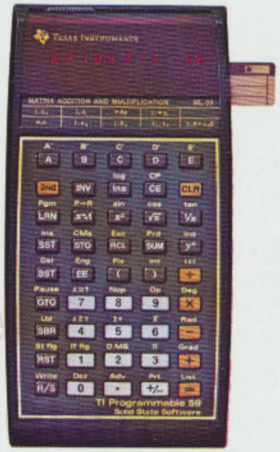
- Up to 480 program steps. Or, up to 60 memories.
- 25-program Master Library Module with 5,000 program steps.
- Optional plug-in library modules available.
- AOS™ entry system. Enter problems just as you would write them.
- Prints alpha and plots with the PC-100A printer, plotter.

The TI Programmable 58, with TI's new Solid State Software, offers an exceptional value for the professional or the advanced student. The Solid State Software library puts a bank of 25 prewritten programs at your command. Programs in math, statistics, and finance. Or, enter your own custom program, right from the keyboard.

The TI Programmable 58 can transform the numbers you work with into answers that will help you make better analyses. Better estimates. Better decisions. Better conclusions. Included is the detailed owner's manual *Personal Programming*. This programming guide shows you how easy it is to apply the power of programming to your specific problems.

Programmable TI 59

The super-powerful card programmable. With plug-in library module.

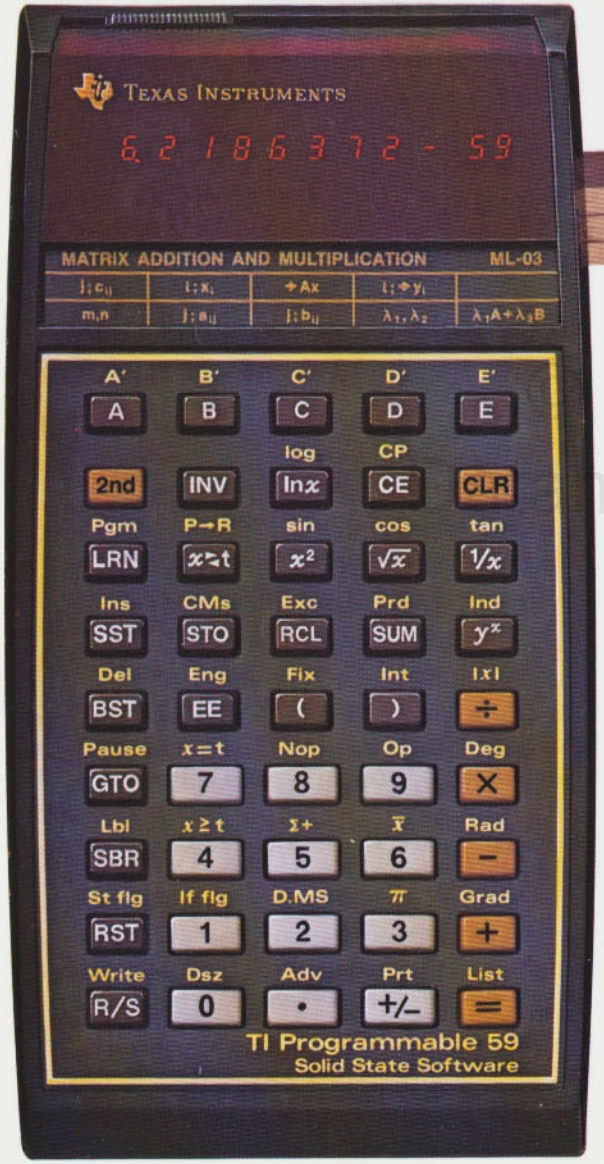


- Up to 960 program steps. Or, up to 100 memories.
- 25-program Master Library Module with 5,000 program steps.
- Optional plug-in library modules available.
- Magnetic cards to record your personal programs.
- AOS™ entry system. Enter problems just as you would write them.
- Prints alpha and plots with the PC-100A.

The TI Programmable 59 is TI's top-of-the-line hand-held programmable. It features amazing versatility, with both Solid State Software *and* magnetic card capability. Solid State Software puts prewritten programs at your fingertips. Magnetic cards let you record custom programs and make them part of your library. The detailed owner's manual, *Personal Programming*, provides a step-by-step guide to the ease and problem solving power of programming.

The TI Programmable 59 represents a revolutionary new advance in personal programmable calculators—truly the ultimate programmable.

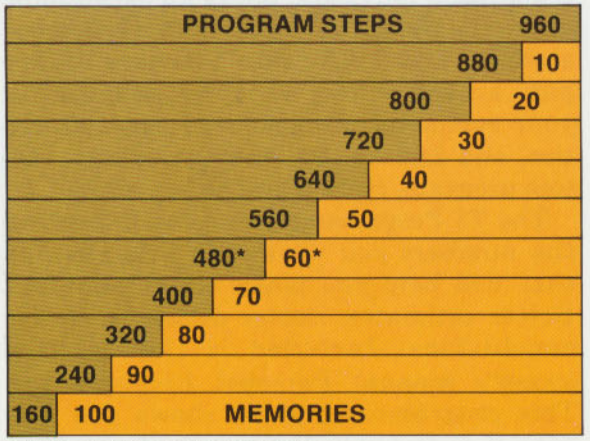
The TI Programmable 59. The super-powerful card programmable with revolutionary, plug-in Solid State Software™ libraries *and* magnetic cards.



For leading edge professionals in business, science, engineering.

The TI Programmable 59 provides incredible power and versatility, with both Solid State Software and magnetic card capability. Solid State Software puts a complete preprogrammed master library at your disposal, with other specialized libraries available at your option. Plus, magnetic cards allow you to record your own custom programs and make them part of your personal library to use again and again. Solid-state library routines may be addressed from your magnetic card or keyed-in program.

Up to 960 program steps. Or, up to 100 memories.



*Calculator is in this configuration when turned on. May be changed from the keyboard or in a program.

The TI Programmable 59 gives you the flexibility to vary the allocation of storage capability between program steps and memory registers. This partitioning feature allows these resources to be allocated to meet your needs. You may require nearly all the memory registers to handle a short problem with many numbers. Or, you may need almost all available program steps and very few memory registers for a long problem with many operations and few variables. The TI Programmable 59 gives you the adaptability to select a broad variety of combinations.

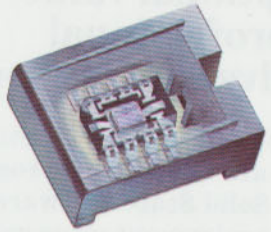
Features of the powerful TI Programmable 59.

- 4 types of display testing with an independent test or "t" register:
  $X \geq t$ $X < t$ $X = t$ $X \neq t$

- Up to 10 registers directly available for: Looping. Increment. Decrement.
- Up to 10 user flags available: Set. Reset. Test.
- Expanded conditional branching.
- Up to 6 levels of subroutines available.
- Flexible addressing with absolute, indirect, and label modes for addressing program steps. Direct and indirect modes for addressing data registers.
- Complete program editing: Insert. Delete. Single step. Back step. No operation.
- Card protect feature prevents others from copying your program. Provides security for confidential programs.
- Smart card reader provides display readout of your location on magnetic cards.
- AOS™ algebraic operating system allows easy, straightforward problem solving. Key in your problem left-to-right, just as you would read or write it in standard mathematical terms.
- Up to 9 sets of parentheses (allowing up to 8 pending operations in your machine) provide extended problem solving capability.
- Over 175 functions and operations.
- Works with the PC-100A thermal printer, plotter. Print, list, and trace your program. Alphanumeric and data plotting capabilities offer new versatility.
- *Personal Programming*, a step-by-step guide into the power of problem solving with programming, is included.
- Membership is available in PPX-59, a program exchange which allows professionals to share programs they develop.

The TI Programmable 59 is the most powerful handheld programmable in the world—more powerful and versatile than some computers of the past decade. With enormous calculating ability, magnetic card storage, and TI's exclusive Solid State Software, it offers capability, quality, and value unmatched in its class.

Plug-in Solid State Software™ library modules. The latest advance in micro-memory technology.



TI's new solid-state program libraries are interchangeable modules that put a variety of programs at your fingertips. Each module contains up to 5,000 steps.

The Master Library Module contains 25 programs—virtually a basic tool kit for today's professional. The Master Library Module is included with the TI Programmable 58 and TI Programmable 59 and makes the following programs available to you:

Mathematics
Matrix Operations (2)
Complex Functions (3)
General Polynomial Evaluation
Zeros of Functions
Numerical Integration (2)
Plane Geometry (3)

Finance
Compound Interest
Annuities
Days Between Dates

Statistics
Normal Distribution
Random Numbers
Combinations, Permutations, Factorials
Moving Averages

General Interest
Hi/Lo Game
Checking Account Control
Degree/Minute/Second Arithmetic
Conversions (2)
Diagnostic

Optional library modules.

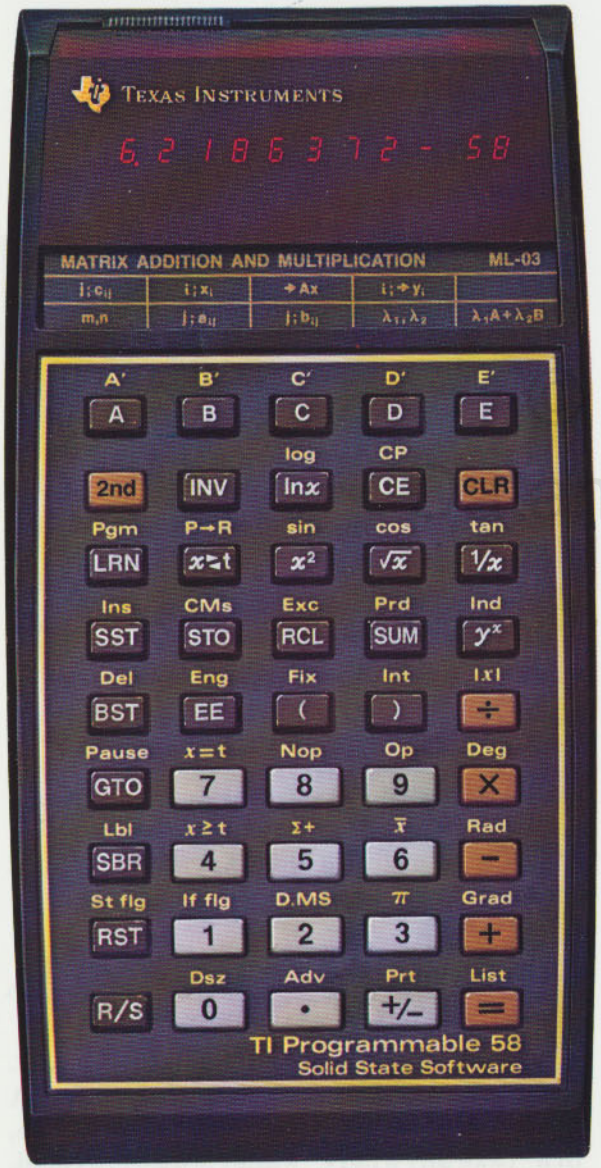
Optional solid-state libraries expand the scope of your TI Programmable 58 or TI Programmable 59 into areas of special interest.

Choose from:

- Applied Statistics
- Real Estate/ Investment
- Aviation
- Marine Navigation
- Surveying

Each library module includes a self-teaching, easy to understand manual. A handy pocket-size quick reference guide, in a "take anywhere" wallet is also provided.

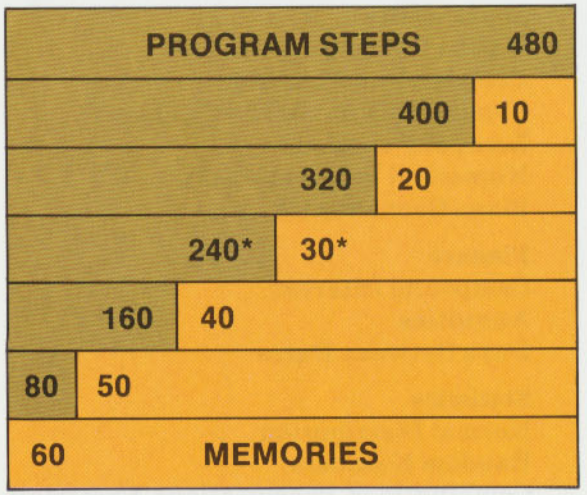
The TI Programmable 58. The advanced key programmable calculator with plug-in Solid State Software™ libraries.



An exceptional value for the professional or the advanced student.

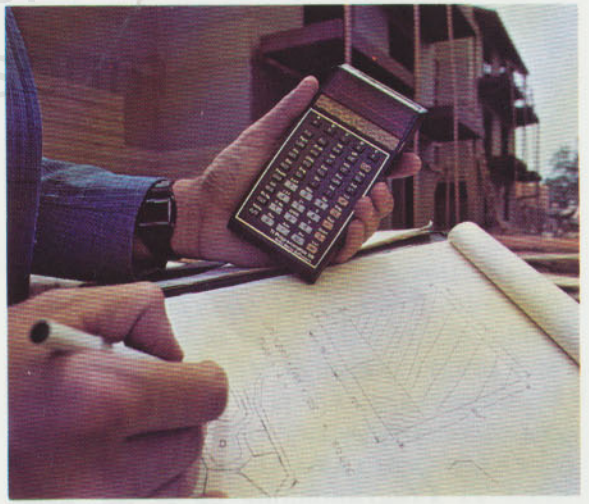
The TI Programmable 58 utilizes TI's state-of-the-art advance in programmable calculators: Solid State Software. This revolutionary development gives you complete preprogrammed libraries, of up to 5,000 program steps each, in convenient plug-in modules. You can also key-in programs you develop, right from the keyboard. With an amazing range of capabilities, TI's advanced technology and manufacturing know-how are the keys to the exceptional value offered by this calculator.

Up to 480 program steps. Or, up to 60 memories.



*Calculator is in this configuration when turned on. May be changed from the keyboard or in a program.

Program steps and memory registers are resources that can be allocated to meet your needs. Short problems with many numbers could require nearly all 60 memories—like budgets or statistical analyses. While long problems with lots of operations and few variables could require almost all 480 program steps—like stock options or orbital mechanics. The TI Programmable 58 gives you the flexibility to select a broad variety of combinations and improve your personal productivity.



Here are some of the features which make the TI Programmable 58 such an outstanding value.

- 4 types of display testing with an independent test or "t" register:
  $X \geq t$ $X < t$ $X = t$ $X \neq t$

- Up to 10 registers directly available for: Looping. Increment. Decrement.
- Up to 10 user flags available: Set. Reset. Test.
- 72 useful labels.
- Up to 6 levels of subroutines available.
- Extremely flexible addressing of: Program Steps: Label, absolute, indirect. Data Memories: Direct, indirect.
- Complete program editing: Insert. Delete. Single step. Back step. No operation.
- AOS™ algebraic operating system allows easy, straightforward problem solving. Key in your problem left to right, just as you would read or write it in standard mathematical terms.
- Up to 9 sets of parentheses (allowing up to 8 pending operations in your machine) provide extended problem solving capability.
- Over 170 functions and operations.
- Works with the PC-100A thermal printer, plotter. Print, list, and trace your programs. Alphanumeric and data plotting capabilities offer new versatility.
- *Personal Programming*, a step-by-step guide into the power of problem solving with programming, is included.

The TI Programmable 58 can help lead you to logical decision making. Validate your decisions with facts. Test for alternate decisions and offer the best options available. Customize your calculator to the type of problems you have. Save time and improve your personal productivity.

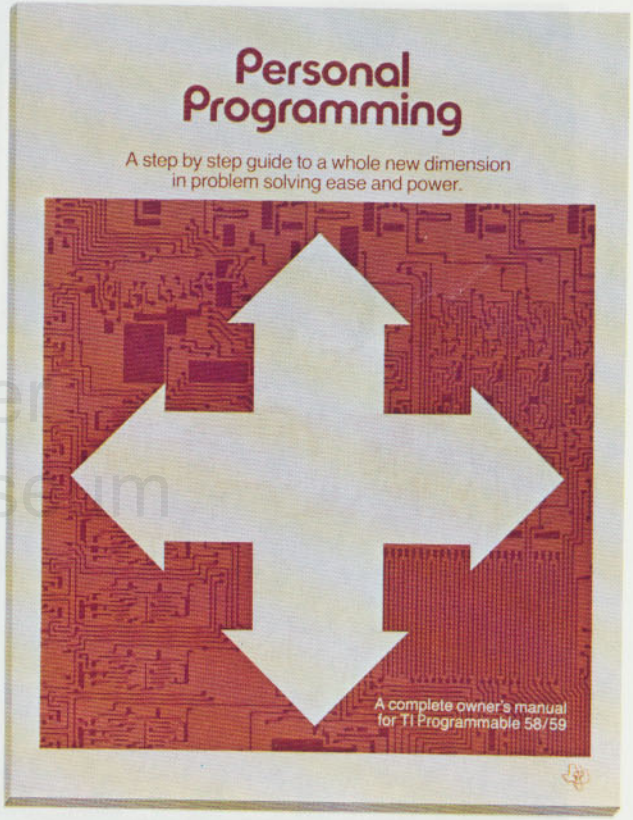
Your Solid State Software library may hold many subroutines for your problems, enabling you to expand up to 5,000 additional programming steps. And, you'll find a variety of optional libraries available. In fact, you will soon discover that the TI Programmable 58 offers more power, more flexibility, more capacity than anything else in its class.

Step-by-step learning guide shows you how to get the most out of your TI Programmable 58 and 59.

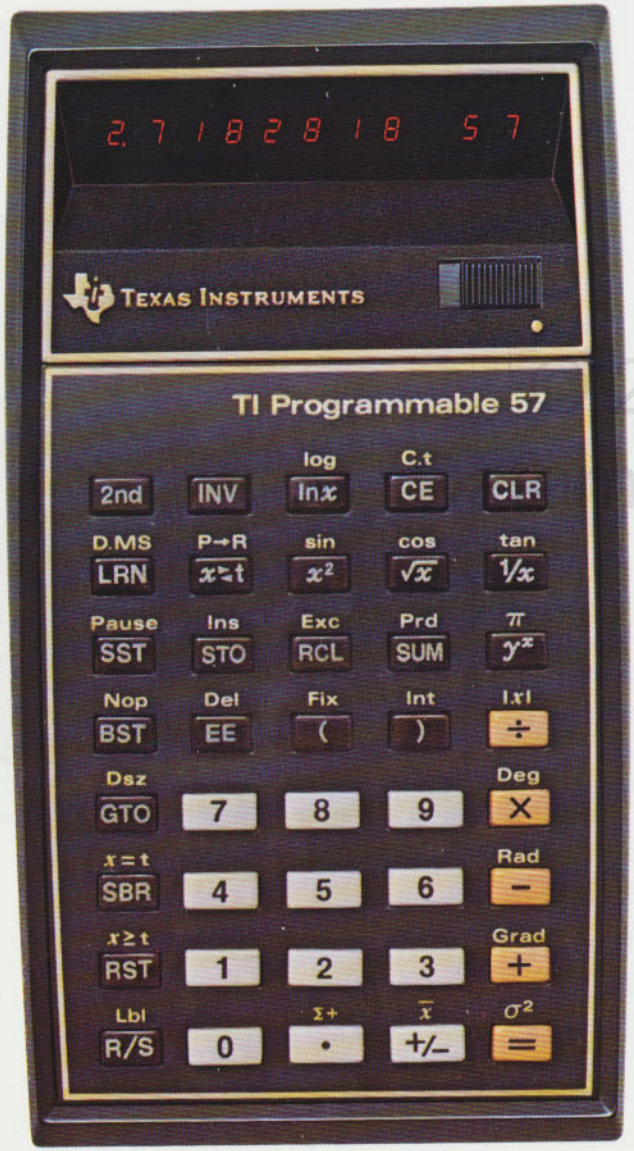
Learn how to get the most out of your TI Programmable 58 or 59, even if you've never programmed before. You won't believe how easy programming can be. *Personal Programming* unlocks the power of your calculator in language everyone can understand. Lets you begin using it with confidence – straight off. Proves how easy and effective programming can be.

Personal Programming takes you through each function, each operation – step-by-step. You'll learn how to put the programs in your Master Library Module to work immediately. How to teach the calculator to remember and do your problems. And, how to use its power when programs aren't needed.

You'll find plenty of illustrated examples. And many will be highly adaptable to the work you do: Bond cost. Spherical coordinates. Investments. Quadratic equations. And much more. Finally, should you already know how to program, you can find the advanced programming details in one convenient section.



The TI Programmable 57. The powerful super slide rule calculator you can program right from the keyboard.



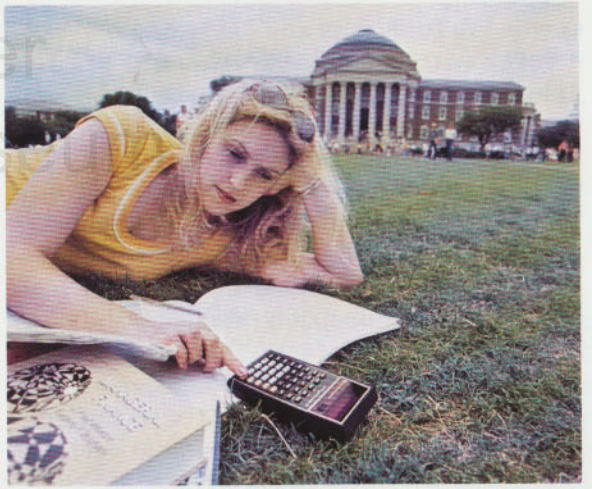
The self-teaching programming system for students and professionals.

The TI Programmable 57 is the super slide rule calculator that's key programmable. It's the ideal machine for learning how useful and easy programming can be.

Even if you are new to programming, the unique combination of the TI Programmable 57's power and its self-teaching programming guide can provide you with immediate positive results. Maintain your competitive edge. Finish assignments rapidly and have time to innovate and offer logical suggestions for improvement. You'll find the TI Programmable 57 a versatile aid for advanced mathematics, engineering, statistics, finance, and many other disciplines.

Just look at some of the computer-like functions offered by the TI Programmable 57:

- 8 multi-use addressable memories provide storage for data, results, and intermediate answers.
- 50 fully merged program steps store up to 150 keystrokes.
- 10 labels for versatile program writing. 6 different forms of branching for decision making and optimization.
- 3 types of unconditional branch for added programming flexibility.
- 2 conditional loop features for repetitive problem solving.
- 2 levels of subroutines eliminate needless keystroke repetition and effectively increase the size of program memory.
- Transfer subroutines to new locations.
- Full edit power: Single-step, back-step, insert, and delete functions allow programs to be rapidly changed with minimal time and effort.



Advanced statistical problems. Logs. Trig. The super slide rule power of the TI Programmable 57 allows you to handle complex mathematical problems with ease. AOS,™ TI's unique algebraic entry system, simplifies problem solving. You enter problems from left-to-right, just as you usually write them.

In addition to features found among the best slide rule calculators the TI Programmable 57 has:

- 9 levels of parentheses.
- Up to 4 pending operations.
- AOS™ algebraic operating system.
- Polar to rectangular conversion and inverse.
- Decimal degrees to degree/minute/second conversion and inverse.
- Integer and fractional values.
- Mean and standard deviation (two variables).
- $\sqrt[x]{y}$.
- Trigonometry functions in degrees, radian, and grad modes.
- Full memory arithmetic and exchange with display.
- Fixed, floating, or scientific display.

But, best of all, you'll find that the TI Programmable 57 is a tremendous value, with the capability of calculators costing much more.

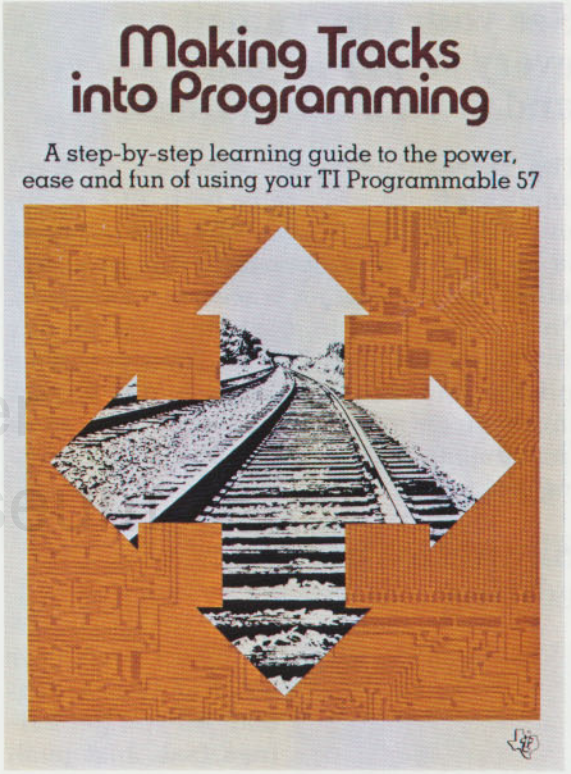
The power of programming is yours with this easy to learn system.

The TI Programmable 57 comes with a new, illustrated, easy to follow learning guide, *Making Tracks Into Programming*. With over 200 pages, this book takes you into the power and fun of programming right away, with step-by-step instructions and examples. Detailed "how to" discussions cover:

- Basic programming.
- Loops and repetitive calculations.
- Editing and documentation.
- Decision making.
- Home management programs.
- Finance and cash planning.
- General math.
- Trigonometry.
- Scientific applications.
- Advanced math and statistics.
- And more.

Developed and tested by leading educators.

Making Tracks Into Programming was developed in cooperation with the University of Denver Mathematics Laboratory. When used in combination with the TI Programmable 57, it lets you begin using and enjoying the benefits of programming immediately.



PC-100A thermal printer, plotter.

See your program at every step. Plot data and print out headings.

The convenience and efficiency of hard copy printouts are yours with TI's exclusive PC-100A. Turn your TI Programmable 58 or 59 into a high-speed printing calculator.* Print, list, or trace your program. Plot curves or histograms. Print out program headings. The PC-100A performs quietly and reliably using a non-impact thermal printhead developed by Texas Instruments – the leader in thermal printing technology.

Simplifies program editing.

```
037  76 LBL
038  14  D
039  53  (
040  35 1/X
041  65  ×
042  61 GTO
043  15  E
044  76 LBL
045  11  A
046  58 FIX
047  09  09
048  88 DMS
049  42 STO
050  01  01
051  92 RTN
052  00  0
```

It prints fast, over 60 characters/second. So you get listings fast. Just push the LIST key for a printout of the entire program memory. Identify your program code, and its position in program memory, right on the tape. Editing is easier and faster when you have the whole program in front of you. Mark the tape against your coding sequence. It's invaluable for checking whether you have keyed-in the instructions correctly.

*The PC-100A is compatible with the following TI programmable calculators: SR-52, SR-56, TI Programmable 58, TI Programmable 59. Alpha and plotting capabilities are applicable only to the TI Programmable 58 and TI Programmable 59.

See each program step executed.

Push the TRACE key. Now every calculation that's performed in your program is printed. The full number and the operation. You can follow subroutine calls and returns. Conditional and unconditional branches, and loops. Conversions and register operations.

Convenient to use. And key-lock security, too.

Simply remove the calculator's battery pack. Press the calculator down on the connector, turn the key, and you're ready to print. You can leave your programmable locked on the PC-100A and take the key with you. A handy, built-in battery charger keeps your battery pack fully charged.

Alphanumeric printing.

	0	1	2	3	4	5	6	7
0		0	1	2	3	4	5	6
1	7	8	9	A	B	C	D	E
2	-	F	G	H	I	J	K	L
3	M	N	O	P	Q	R	S	T
4	.	U	V	W	X	Y	Z	+
5	×	*	√	π	e	(	)	,
6	↑	%	↕	/	=	'	×	x̄
7	²	?	÷	!	⊓	△	Π	Σ

The PC-100A with the TI Programmable 58 or 59, provides print capability for 64 characters (including blank space). Each character is entered by means of a 2-digit address code. Maximum line length is 20 characters.

Program headings.

```
PORTFOLIO ANALYSIS

   48.75      COST
   3200.      SHRS
     85.      MRGN
```

The PC-100A enables you to provide printed headings for your program for easy reference and identification. You can even annotate data on printouts.

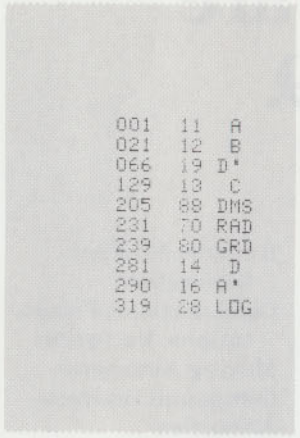
User prompting.

```
ENTER TEMPERATURE
   76.3

ENTER PRESSURE
   749.4
```

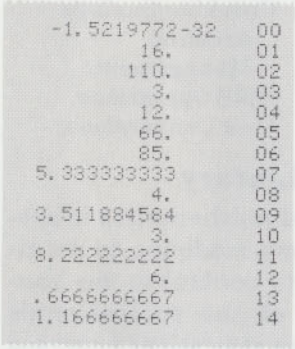
Use the alpha printing power of the TI Programmable 58/-59/PC-100A combination to enter prompting messages right into your program. For instance, assume there are variables which must be entered in specific locations each time your program is run. You can set up your program so that when it needs this data the program halts and the PC-100A prints out a request for the variable data. Now your program can be run and used by an assistant. A valuable saving of your professional time.

Program labels.



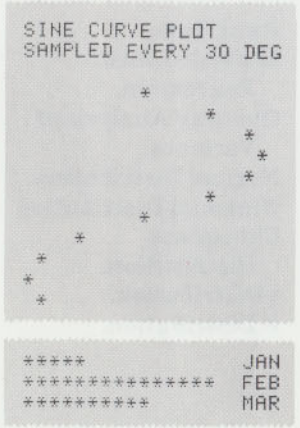
The PC-100A makes possible a new dimension in simplifying program documentation. By listing all program labels and locations on your command, it does most of the documentation for you. Reuse of the program at some later date is made easy.

List Registers.



You can even list the numbers stored in the data memories, with the memory address indicated right next to each number. Really handy when you're debugging programs. Or, use it to print tables.

Data plotting.



The PC-100A allows you to input data from your TI Programmable 58 or 59 and plot curves and histograms. You can make a plot of data directly from the calculator keyboard or automatically from a program.

All tape printouts shown approximately 60% of actual size.

Share programs with your colleagues through PPX-59.

There may be times when you need a complex specialty program. But you'd like the convenience of having a ready-made program that's not a bother to obtain. This is where TI's Professional Program Exchange (PPX) can be of enormous help.

As a member you'll be able to turn to the section of your PPX-59 Catalog that serves your discipline. With hundreds of user-submitted programs available, there's a good chance the one you need is there. Order it, and put it to work on receipt.

What you get is a program developed, tested, and submitted by one of your professional peers. Likewise, when you develop programs you may wish to submit them for possible inclusion in the Exchange for others to use.

Your yearly PPX-59 membership will open the door to discovery of the many interesting programs being written by others in your profession. As an active member, you become part of a network designed to exchange TI Programmable 59 programs within all professions. Using PPX-59 as a vehicle to contribute and obtain programs, you will be able to broaden your professional base while you increase your productivity.

Here is what your yearly membership provides:

Source Catalog. Describes the wide selection of programs available to you in dozens of categories: Business. Mathematics. Astrology. Engineering. Games. Air and Marine Navigation. And much more.

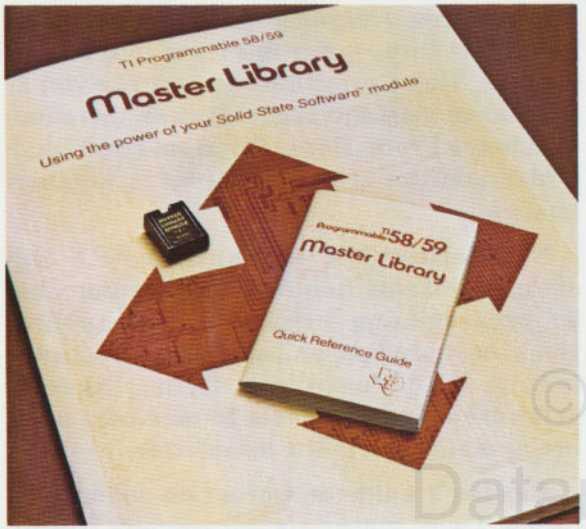
Three free programs. As a new member, you select three programs from your source catalog. These programs are sent to you at no charge (postage prepaid) as an introduction to the Professional Program Exchange. Order additional programs for a nominal charge.

Newsletter. The bi-monthly *PPX Exchange* contains helpful TI Programmable 59 programming hints, unusual applications, new product and software announcements, and feature articles. Special software sales, available to members only, are also offered via the newsletter.

Member's guide and program submission forms. These materials tell you how to submit your programs for acceptance into PPX-59. A description and author credit for each program is presented in the latest PPX-59 Source Catalog.

Programs in dozens of professional categories are available to you through your PPX-59 membership: Business. Finance. Statistics and Probability. Mathematics. Natural Sciences. Life Sciences. Engineering. Technical. Social and Behavioral Sciences. Natural Resources. General. You can open the door to program sharing by becoming a member of PPX-59.

Texas Instruments plug-in Solid State Software™ libraries for the TI Programmable 58 and 59.



TI's state-of-the-art technology takes the information that once required up to 25 magnetic cards... and puts it into one tiny plug-in module.

You'll be amazed at the convenience. The equivalent of a 25-card library (224-step cards) can be contained in one small module. Drop in a tough, durable Solid State Software module in seconds and quickly access a program with a few keystrokes. The Master Library Module provided with the TI Programmable 58 and TI Programmable 59 provides extended power for solving mathematical, statistical, financial, and other problems. Optional plug-in modules allow you to customize your machine into a specialty calculator. For statistics. Real estate and investment. Surveying. Aviation. Marine navigation. Each library module includes a self-teaching, easy to understand manual, a handy, pocket-size quick reference guide, and a convenient wallet.

Use the preprogrammed library module by itself. Use the 5,000 step module as a base and call subroutines from your magnetic card or keyed-in program. Use your magnetic card or keyed-in program as a base and call subroutines from your 5,000 step library module. Do chaining by calling subroutines both ways. And much more.

Master Library.

The Master Library is included with the TI Programmable 58 and TI Programmable 59. It contains a collection of useful programs designed to provide the professional with a "tool kit" of preprogrammed solutions to a wide variety of problems. Familiarity with library programs is gained through use of calculations of everyday interest, such as checking accounts, investments, and calculator games. Coverage includes mathematical operations like function solution and matrix manipulation, financial calculations like compound interest and annuity.

Contents:

- Diagnostic.
- Matrix Inversion, Determinants, and Simultaneous Equations.
- Matrix Addition and Multiplication.
- Complex Arithmetic.
- Complex Functions.
- Complex Trig Functions.
- Polynomial Evaluation.
- Zeros of Functions.
- Simpson's Approximation (Continuous).
- Simpson's Approximation (Discrete).
- Triangle Solutions (2).
- Curve Solution.
- Normal Distribution.
- Random Number Generator.
- Combinations, Permutations, Factorials.
- Moving Averages.
- Compound Interest.
- Annuities.
- Day of the Week, Days Between Dates.
- Hi-Lo Game.
- Checking/Savings Account Management.
- DMS Operations.
- Unit Conversions.

Applied Statistics Library

This branch of applied mathematics is useful in many fields: from medicine to political science, and quality control to mechanical design. Yet few of the professionals who could benefit from statistical analyses know how to perform them. The field-tested programs in this library help close that gap.

Contents:

- Random Number Generator.
- Data Entry Programs.
- Means and Moments.
- Histogram Construction.
- Theoretical Histogram.
- Data Transforms.
- t Statistic Evaluation.
- Contingency Table Analysis.
- Two-way Analysis of Variance.
- Rank Sum.
- Multiple Linear Regression.
- One-way Analysis of Variance.
- Normal Distribution.
- Binomial Distribution.
- Chi-square Distribution.
- t Distribution.
- F Distribution.

Real Estate/Investment Library.

For those interested in capital investments, such as real estate, this library contains cash flow, return on investment, depreciation, tax audit, and other calculations that can make the difference between profitable ventures and expensive mistakes. The programs feature complete treatment of important practical details like the tax laws on excess depreciation.

Contents:

- Annuities.
- Remaining Balance/ Accumulated Interest.
- Compound Interest.
- Straight Line Depreciation.
- Declining Balance Depreciation.
- Sum of the Years Digits Depreciation.
- Composite Depreciation.
- Excess Depreciation.
- Curve Fit (Regression Analysis).
- Optimal Regression.
- Internal Rate of Return.
- Cash Flow Analysis.
- Yearly Amortization Schedule.
- Investment Feasibility.
- Annual Property Operating Data.
- Installment Sale Analysis.

Aviation Library.

A collection of programs for the private or business pilot. Flight planning, including fuel schedules. Expanded way point capacity makes coast-to-coast flight plans feasible. Generate in-flight checklists, printed on the PC-100A before you leave the ground. In-flight radio fixes with both VOR and DME gear. You'd need thousands of dollars worth of avionics to match the RNAV capability of this library.

Contents:

- Flight Plan with Wind.
- Flight Plan and Verification.
- Long Range Flight Plan.
- Atmosphere, Speed, Temperature, and Altitude.
- Position and Navigation by One VOR.
- DME Area Navigation.
- VOR Area Navigation.
- Course Correction.
- Rate of Climb; Turn Performance.
- General Weight and Balance.
- Customized Weight and Balance.
- Pilot Unit Conversions.
- RNAV Flight Plan.
- Customized Unit Conversion.
- Time Zone Conversion.
- Predicting Freezing Level; Lowest Usable Flight Level.
- Wind Components and Average Vector.
- The Wind Triangle.
- Great Circle Flying.
- Line of Sight Distance and Altitude; DME Speed Correction.

Marine Navigation Library.

A comprehensive library which meets the needs of the racing sailor or ocean crossing navigator. With coastal navigation programs you can compute relative or absolute position, speed made good, and true course. Or use the celestial navigation programs for the least complicated, error free sight reduction and position plotting system available. The section on racing tactics gives you a competitive edge.

Coastal Navigation.

Contents:

- Time-Speed-Distance with Current Sailing.
- Distance Short of, Beyond, or to Horizon.
- Velocity Needed to Change Relative Position.
- Velocity, VMG, and Current Vectors.
- Course to Steer and SMG (Planning).
- Distance Off One Object and Time of Nearest Approach.
- DMG, SMG, CMG from Two Objects.
- Course Made Good from Three Bearings.
- Dead Reckoning.
- Rhumbline Navigation.
- Map Initialization.
- Running Fix from One Object (LAT/LON).
- Fix from Two Objects (LAT/LON).

Celestial Navigation.

Contents:

- Time of Sunrise/ Sunset/Twilight.
- Fix by Two Observations.
- Planet Location.
- Star Identification.
- Sextant Correction.
- Sight Reduction (Sun, Moon, Planet, Star).
- Time of Local Apparent Noon and Sun Lines.
- Noon Sight Fix.

Ocean Sailing.

Contents:

- Great Circle Sailing.
- Dead Reckoning.
- Rhumbline Navigation.

Sailing and Tactics.

Contents:

- Modified Wind.
- SMG, CMG, and Time to Lay Line.
- Distance and Bearing to the Mark.

Surveying Library.

Programs for surveyors, civil engineers, architects, and other professionals involved in land measurement and earthwork. Whether you're working in vertical or horizontal curve design or electronic distance measurement, this library contains programs to solve the problems you find most time-consuming. Our Solid State Software makes field work much easier by eliminating program card juggling.

Contents:

- Azimuth/Bearing Traverse.
- Inverse Traverse.
- Field Angle Traverse.
- Circle Arc Traverse.
- Closure.
- Compass Rule Balance.
- Transit Rule Balance.
- Vertical Curve Design.
- Horizontal Curve Design.
- EDM Slope Reduction – Slope Angle.
- EDM Slope Reduction – Delta Elevation.
- Stadia Reductions and Traverse.
- Intersection – Bearing/Bearing.
- Intersection – Distance/Distance.
- Intersection – Bearing/Distance.
- Three Point Resection.
- Intersection – Bearing if Perpendicular.
- Borrow Pit Volume.
- Earthwork Volume.
- Triangle Solutions (2).
- Curve Solution.

AOS™ Texas Instruments unique algebraic operating system.

What is AOS?

AOS is more than just algebraic entry. It's a *full* mathematic hierarchy coupled with multiple levels of parentheses. This means more pending operations, as well as easy left-to-right entry of expressions—both numbers and functions.

Why pending operations are so important.

Because you can compute complex equations directly. For example, a seemingly simple calculation like this:

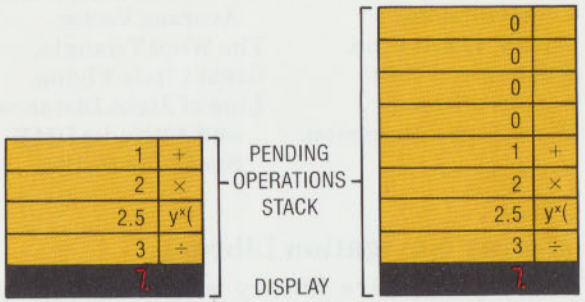
$$1 + 2 \times 2.5^{(3 \div 7)} = ?$$

contains *four* pending operations. A TI Programmable 57, 58, or 59 calculator with full AOS easily handles it—just as you would state it. Without having to rearrange the equation. Without need for storing intermediate results. Or having to remember what's in the stack. With AOS, you solve it exactly as it is written:

1 [+] 2 [×] 2.5 [y^x] [(] 3 [÷] 7 [=] 3.9619363

Pressing the [=] key automatically closes the parentheses and completes the calculation.

AOS *remembers* the numbers *and* functions in its pending operations stack. And processes them according to mathematical hierarchy. As more operations become pending, the stack fills up. As operations are completed, the stack empties into the display. Here's what the stack contains when you key in the calculation:



TI PROGRAMMABLE 57 TI PROGRAMMABLE 58/59

Mathematical Hierarchy.

This is the universally recognized order of performing calculations. Functions first. Powers and roots. Multiplication or division. Then addition or subtraction. AOS performs calculations in this order. But you have the option to change the order whenever you wish by using the parentheses keys. We did that in the above example. With AOS, when you press the equal key, the answer (3.9619363) is computed using the correct order of execution.

AOS makes the calculator part of the solution. Not part of the problem.

The case for AOS is strong. That's why TI chose it. Whether you own a calculator with ordinary algebraic entry, or Reverse Polish Notation (RPN), or no calculator at all, we think you'll prefer AOS. Because you begin using it immediately. There's no new language to learn. Even if you are conditioned to RPN, the added value and power of TI's programmable calculators with unique AOS is well worth the easy transition.

TI's goal: Greater value. Higher performance. Lower price. Quality. Without compromise.

How does Texas Instruments—time and again—provide advanced products, like calculators, with greater capability than our most respected competitors and at a substantially lower price?

The key to better value in TI calculators is technology. Plus, a very tough-minded management philosophy that says, design to cost objective. Reduce prices as costs permit. But never compromise our reputation with shortcuts in quality.

Instead, TI uses the tremendous leverage of technological know-how. Coupled with an almost total in-house start-to-finish capability. This is what brings you unchallenged value.

When you judge the value of a high-technology product, it pays to look closely at the company behind the product.

Know-how is the name of the game. TI invented the original integrated circuit and the "calculator-on-a-chip" that ignited the calculator revolution...and is the world's leading producer of integrated circuits. TI holds the basic patent on the miniature calculator itself...and is a world leader in the production of electronic calculators.

It is that kind of experience, know-how, and commitment that results in better value. Never compromise.

The era of personal programming is here.

Personal programming is here. The programmable calculator introduces a new dimension in problem solving. It decentralizes and personalizes the decision enhancing power of the computer—bringing to the individual what before was available only to the organization. The programmable calculator is a powerful personal mathematical resource. And you don't need to know computer programming to put it to work. In fact, there's no special language to learn.

There's nothing mysterious about programming.

You already know how to program—or almost. Whenever you perform a series of calculations, then bring them together to get an answer, you're programming. Except you keep most of it in your head, making each decision as you go.

In fact, you can do a great deal of programming and never use more than the four basic functions (add, subtract, multiply, divide). Programming is natural, you can express your personal approach to problem solving. Whether comparing finance costs on an installment purchase, or solving a complex statistical problem.

What does programmability give you?

The ability to tell a calculator: How to perform your calculations your way—repetitively if you wish. How to make detailed, logical decisions for you—based on your inputs or intermediate results. And, how to handle several different subset problems and then combine them to solve your overall problem. *Better decisions by far.*

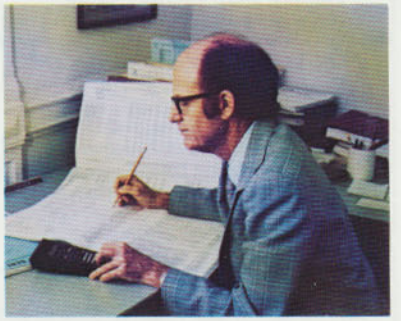
With a programmable calculator from Texas Instruments, this power is available to you today. And, at prices well within the reach of almost every professional and serious student.

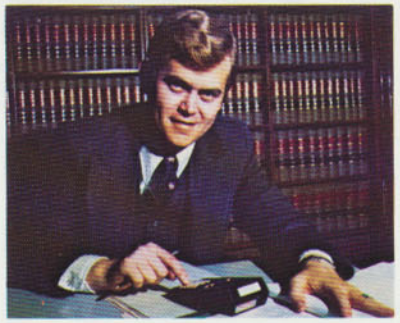
In any area where answers are needed, programmables deliver.

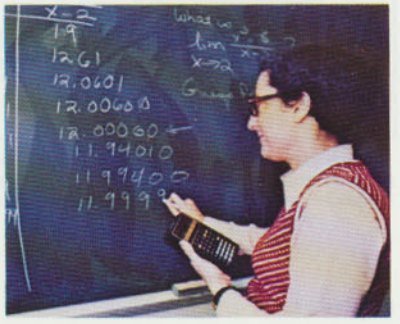
When professionals need decisions, programmables can deliver. Anywhere. Anytime. These professionals chose the famous Texas Instruments SR-52 to take advantage of the power that programming could bring to them. Power to process data. Calculate decisions. Move ahead.

Now, with TI's new generation of programmables, that power is more versatile, more effective, more affordable than ever before.

See the TI Programmable 57/58/59 and PC-100A today, at your Texas Instruments retailer. Put the power of programming to work for you.







Compare the TI Programmable 57/58/59 with other programmables in their class.

	TI-57	TI-58	TI-59	HP-25	HP-67	HP-97
MEMORIES						
Program memory						
Maximum number of steps	50	480	960	49	224	224
Expandable		•	•			
Merging – fully merged	•			•	•	•
semi merged*		•	•			
Solid-state software		•	•			
Number of steps		5,000	5,000			
Program down load into RAM		•	•			
Useable as subroutine to expand program memory size		•	•			
Useable as separate program		•	•			
Data memory						
Maximum number of registers	8	60	100	8	26	26
Expandable		•	•			
Addressing – absolute	•	•	•	•	•	•
– indirect		•	•		•	•
– max. no. of index registers		60	100		1	1
– short form		•	•			
– EXCH	•	•	•			
– increment/decrement registers		•	•			
PROGRAMMING						
Program edit – SST/BST, pause	•	•	•	•	•	•
Program edit – insert/delete	•	•	•		•	•
PROGRAM CONTROL						
Conditional branching						
Numeric comparisons x=t, x≠t, x<t, x≥t, x=0 x≠0, x<0, x≥0 (t register = 0)	•	•	•	•	•	•
Independent comparison (t register)	•	•	•			
Flags (Boolean comparison)						
Number of flags		10	10		4	4
Set/reset flag, test flag		•	•		•	•
Test on error (if error/if not error)		•	•			
Loop control						
Increment/decrement (branch on zero)	•	•	•		•	•
Increment/decrement (branch on not zero)	•	•	•			
No. of index registers (direct address)	1	10	10		1	1
No. of index registers (indirect address)		60 max.	100 max.			
Unconditional – No. of levels of subroutine	2	6	6		3	3

	TI-57	TI-58	TI-59	HP-25	HP-67	HP-97
Branch addressing types						
Absolute		•	•	•		
Relative					•	•
Indirect		•	•		•	•
Label	•	•	•		•	•
Short form		•	•			
Label addressing						
User defined keys		10	10		10	10
No. possible labels	10	72	72		20	20
User control keys						
NOP	•	•	•	•	•	•
Clear Program		•	•	•	•	•
Clear t register	•	•	•			
RST	•	•	•			
Program step/data memory repartition		•	•			
MAGNETIC I/O						
Capacity per card – steps			480		224	224
– registers			60		26	26
Read/write program/data			•		•	•
Autoload with override			•			
PRINTING						
Print alpha, plot, list labels		•**	•**			
Print numerics, list, trace		•**	•**			•
OPERATING SYSTEM						
Entry system	AOS	AOS	AOS	RPN	RPN	RPN
No. of pending operations	4	8	8			
No. of sets of parentheses	9	9	9			
No. of stack registers	5	9	9	4	4	4
FUNCTIONS						
Scientific, trig, DRG, pol/rect, DMS	•	•	•	•	•	•
Integer, fraction, absolute value	•	•	•	•	•	•
Linear regression, trend line, correlation coefficient		•	•			
DISPLAY FORMAT						
VLED Characters	8+2, 8	8+2, 10	8+2, 10	8+2, 10	10+2, 10	10+2, 10
Scientific notation	•	•	•	•	•	•
Engineering notation		•	•	•	•	•
OPERATING CHARACTERISTICS						
Internal digits	11	13	13	12	12	12

*Memory address, second functions and other key sequences. **With optional printer.

Due to the difficulty of photographing calculator readouts, displays represented in this brochure are simulated.
Texas Instruments reserves the right to make changes in materials and specifications without notice.

TEXAS INSTRUMENTS
INCORPORATED

Printed in U.S.A.

95524