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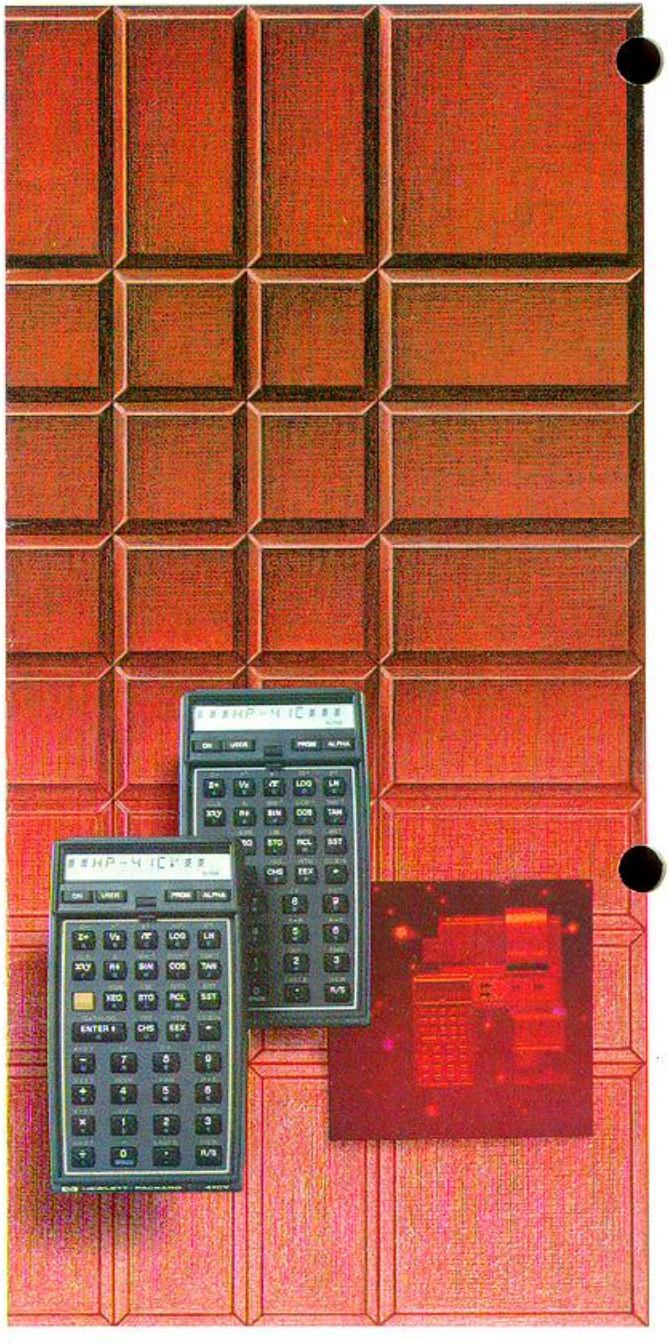
HEWLETT · PACKARD

HP-41C/CV



A CALCULATOR. A SYSTEM. A STANDARD FOR PROFESSIONALS.

The HP-41 is the most versatile, powerful and easy-to-use calculator Hewlett-Packard has ever designed. And although it is simple to operate, it offers the advanced problem-solving power your professional world demands. NOW there are two models to choose from! In addition to the HP-41C, Hewlett-Packard offers the HP-41CV, with five times more memory built-in!

A Calculator

The HP-41 by itself could easily be all the calculator you'll ever need. While it is our most powerful ever personal calculator, it is remarkably uncomplicated, communicating in familiar words so operation is simple even for the novice. Status annunciators keep everything error-free by reminding you of operating modes and battery life. You can name a program, then call it up by name for execution.

Both HP-41 calculators are fully programmable. The HP-41CV resident memory retains up to 2,000 program lines, or 319 data registers, or any combination of lines and registers. The HP-41C resident memory holds up to 400 program lines, or 63 data registers, or any combination. Memory modules can expand the HP-41C memory to that of the HP-41CV.

The HP-41 is straightforward and logical. It uses time-proven RPN logic system and no-nonsense keystroke programming, guaranteed to help you easily solve the most difficult problems.

The HP-41 is versatile, able to switch from a predefined calculator to a user-customized instrument, tailored to your personal needs, matched to your professional demands.

A System

Alone, the HP-41 is an extraordinary calculating instrument. Yet it also constitutes the heart of an exceptional personal calculating system which is adaptable to your computational needs. When combined with peripherals and modules designed specifically for the HP-41, you can develop an expanded, growing system matched to virtually any requirement.

The Card Reader stores and retrieves your personal program and data library on magnetic cards. These cards can be used with your own or any other HP-41 Card Reader.

The Wand lets you quickly load long programs by reading bar codes printed on paper.

The Memory Modules expand the HP-41C's memory capacity up to five times. Additionally, the new Quad Memory Module allows you to expand your HP-41C to full HP-41CV capacity using only one port.

The Printer/Plotter has a complete alphanumeric character set and can document your calculations and program listings in three operational modes. It can also plot graphs and even print user definable "special characters."

The multipurpose Rechargeable Battery Pack furnishes extended operating life, doubles as a reserve power pack and provides an efficient power source for extensive system use.

The Application Modules provide preprogrammed answers to hundreds of complex problems, many of them related to your particular discipline or field.

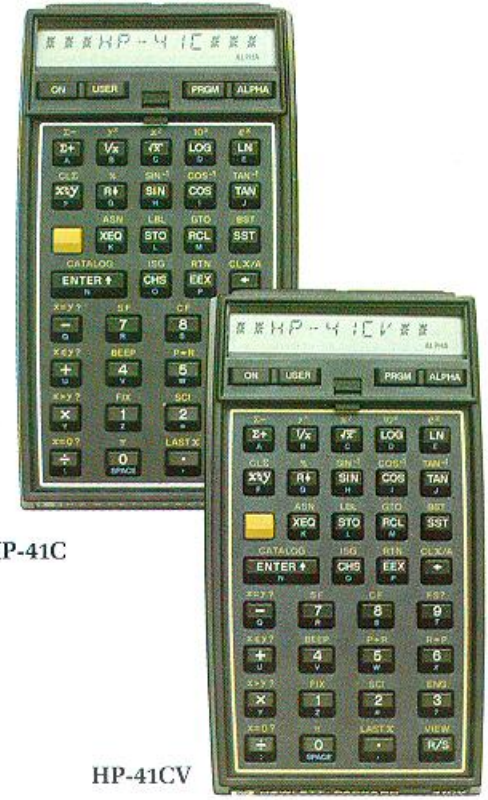
With the addition of its peripherals and modules, the HP-41 becomes your precision-fitted professional system. And to help you get maximum benefit from your problem-solving system, Hewlett-Packard provides an extensive choice of HP-41 software including:

HP-41 Applications Pacs, for preprogrammed answers; Solutions Books for the best of programs submitted to HP by users; the Users' Library for subscription to a continuing source of user-written programs; and HP-67/97 program cards which your "extra-smart" HP-41 Card Reader automatically translates to HP-41 code.

A Standard for Professionals

The HP-41 is more than just another calculator. Its advanced problem-solving power puts answers right at your fingertips. Its ease-of-use features make information more accessible. Its applications support and software provides a multitude of preprogrammed solutions. And, as always, Hewlett-Packard engineering delivers uncompromising quality and long-term reliability, establishing the HP-41 as a professional standard of excellence.

The HP-41 from Hewlett-Packard. A calculator. A system. A standard for professionals.



A CALCULATOR

The HP-41 features the latest advances in calculator technology to give you an easy-to-use, convenient pocket-sized problem-solver. Communication features let you input to the calculator in "friendly" words as well as numbers. And the HP-41 uses time-proven RPN logic, acclaimed as the most natural and efficient system for solving problems on a professional calculator.

Customization features let you personalize the calculator for special applications. Continuous Memory saves your programs and data for later use. Programming features offer flexibility, power and ease-of-use.

Communication: The HP-41 Speaks Your Language

No matter what your profession, the HP-41 speaks your language. You communicate in words. Or with numbers. Or both. You can type in any combination of numbers and letters up to 24 characters in a row, with as many as 12 characters displayed at one time.

You are firmly in control, helped along by a complete system of status annunciators which appear in a special area of the display. You know whether the next key you press will be executed or "remembered" as a program instruction; you see whether you're keying in numbers or alphabetic characters. One glance reveals the condition of program flags, trigonometric modes or battery life.

HP-41: Powerful, Yet Easy to Use

- The HP-41 communicates with you in words as well as numbers.
- You can customize the HP-41 to your own design.
- Programming is fast and easy.
- Continuous Memory saves everything.
- Optional Peripherals allow you to expand capabilities.

The display even shows you whether the shift key has been pressed. And to help you operate the HP-41 more easily, a wide variety of comprehensive messages pinpoint operating errors—in English! These messages appear in the display and aid you in tracking down calculation errors or program "bugs."

Besides displaying status annunciators and alphabetic strings, you can show numbers in fixed, scientific and engineering notation at your command. And you have the choice of automatic commas or decimal points to make large numbers more readable. To make all this communication easier on your eyes,

the HP-41 utilizes a high-resolution liquid crystal display (LCD) that is easy to read in the office or in the field in bright sunlight.

RPN: Simple, Logical, Effective

HP's RPN logic system allows you to slice through even the most complex problems with ease. RPN works problems exactly the same way you're used to working them; in the same order you do them with pencil and paper. Because RPN shows you intermediate results, you never get lost in the middle of your problem. It is a simple, fundamental and powerful method of calculation.

Customize the HP-41 to Your Own Design

The HP-41 comes with 58 popular functions on the keyboard, ready to help you solve scientific and mathematics problems quickly. But, in fact, over 130 separate operations comprise the total function library of the HP-41! And you can assign any of these functions or any program you have written to any key—with a few keystrokes you can create a "personalized" custom calculator for your own special applications. In Normal mode, the calculator operates using its normal keyboard. But the press of a button to User mode provides each key with a new function possibility—a function or program you assign.

To help with this customizing feature, each HP-41 comes with two keyboard overlays and a set of user labels. You simply mark on the overlay, above each key, the new assigned function.

To further aid your customizing requirements, the HP-41 offers maximum flexibility in memory allocation. You can divide its registers between data storage and program memory in any way you choose. You can even store alphanumeric strings of up to six characters in any storage register.

Continuous Memory Saves Everything

The HP-41 is equipped with Continuous Memory that preserves everything from stored data to user-defined keyboard assignments, even though the calculator is turned off. As a result, you can program frequently needed calculations once, then perform them as often as necessary without having to reenter your program.

Programming: Immediately Easy

Programming the HP-41 is so simple you'll write programs immediately. Just switch to Program mode, give the program a name—an easy-to-remember alphabetic label—then press keys on the calculator in the same order you'd use to solve the problem or perform the operation. That's all there is to it. The HP-41 remembers those keystrokes as a program.

Once back in the Normal mode, you simply call the program by name and the entire series of keystrokes is executed at your command. No complicated programming languages to remember. No elaborate "start-up" procedures to memorize.

You can maintain more and longer programs in the HP-41 than you ever thought possible. Each

program is autonomous. You can call it by name, run it, edit it, even wipe it out completely—all without affecting other programs in the calculator.

As you begin to write a new program, the LCD display shows you how much unused program memory remains. Then, as you write your program, it shows you program information in handy line form.

Local and Global Branching

Each program in the HP-41 is autonomous, with up to 99 local labels available for addressing, subroutining or defining parts of a program. Independent programs are interactive and by using global labels you can summon one program or branch to a subroutine (up to six labels) from another program.

Editing is Fast and Easy

The HP-41 contains several editing features to help you correct and alter your programs. You can go to any program without execution as well as to any local label or line number within a program. Single- or back-step through a program and examine each line without execution or execute any program one step at a time. You can also insert or delete a program line at any point—or, if you desire, delete a specified number of program lines.

Valuable Conditional Instructions

Ten comparison tests give your HP-41 powerful decision-making capability. A program can automatically compare numerical data, constants or results and alter execution based on the comparison outcome.

Flags Enhance Control

Flags are another decision-making feature of the HP-41. In programming, a flag can be tested, and program execution altered based on the outcome of the test. The HP-41 contains 56 flags, giving your programs unheard of control over conditions in your programs and even the calculator itself.

Flexible Indirect Addressing

The HP-41 has 25 separate operations, which, in addition to their normal operation, can also be controlled indirectly. This feature allows condition alterations while running, just like sophisticated computers.

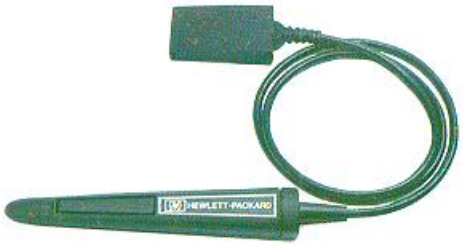
You can indirectly address entire programs or subroutines or any register of the automatic memory stack and more. Use any register as the indirect control register.

A SYSTEM

When you examine the HP-41, you'll see that it is more than just an extraordinary calculating instrument. By adding optional plug-in peripherals and modules, you can expand the capabilities of the HP-41, keeping pace with your growing professional needs.

These options give you increased flexibility as well. You can plug in any number of options up to four, in any combination you need. Each quick-connect peripheral is completely portable, designed to augment the utility and flexibility of your HP-41 system.

THE HP 82153A OPTICAL WAND



With the wand, Hewlett-Packard makes programming the HP-41 even quicker and easier. The wand reads bar code, a convenient and inexpensive means of inputting and storing HP-41 programs and data. Almost all HP-41 software is available in bar code, including Users' Library programs and Solutions Books.*

Bar Code: Easy, Efficient and Inexpensive

The wand opens up a world of bar code benefits. For instance, bar code listings are convenient, because most are printed on standard paper and storable in a three-ring binder. And bar code shaves expense by using paper, perhaps the least expensive storage medium available. Sharing programs is simple, with duplication possible by offset printing or high-quality copier and with distribution handled by normal mailing.

In addition, bar code affords you creative programming flexibility. Pressure sensitive bar code labels are included, allowing you to immediately create a bar code sequence of your own short program or data file.

The Paper Keyboard: Ease in Function Entry

All the HP-41's functions are printed on a paper keyboard in bar code. By using this paper keyboard, many HP-41 functions can be entered quickly and without key errors. The wand scans a short bar code sequence, executes the function, or loads your command. For example, a command normally requiring nine keystrokes can be accomplished in one quick pass of the wand.

Some users may find the paper keyboard especially valuable for quickly loading programs from listings as an alternative to keying them in.

HP's Bar Code Production Service

In order to ensure proper high-quality bar code production, Hewlett-Packard has arranged bar code production service with an independent printer. This

*The only HP generated or maintained software which is not available in bar code is Application Pac programs. Application Pac modules utilize special capabilities which are not reproducible in bar code form.

HP service allows you to have your custom programs converted to bar code at a very low cost.

The Wand Advantages

Because the wand offers fast input capability, you should consider the wand's advantages in light of your needs and applications. The wand may be advantageous if:

- You generally rely on existing software.
- You need wide distribution of software and data.
- You seldom need to update software.

The wand puts all the HP-41 Solutions Books and Users' Library Programs right at your fingertips.

The wand: It speeds up entry, averts errors, saves time.

THE HP 82104A CARD READER

The card reader for the HP-41 saves your program and data on small, magnetic cards. By passing the appropriate magnetic card through the card reader, you place all the information on the card in the HP-41. Instantly. You write and store programs on the cards just as quickly, too. And the card reader is "extra-smart": it swiftly reads cards whether under your control or that of a program; it files cards as they are read; it prompts you for the next card; it even accepts program cards from the HP-67 and HP-97, automatically translating programs into HP-41 code.

The Card Reader Advantages

Because the card reader as a storage medium offers both rapid reading and writing abilities, you should consider the card reader's advantages in light of your needs and applications. The card reader may be advantageous if:

- You frequently exchange long programs.
- You often develop or change software.
- You need quick storage of programs and data.

The Card Reader: It saves programs, saves data, saves time.

MEMORY MODULES

These handy modules can actually quintuple the HP-41C's memory. You simply plug in up to four regular modules or one Quad Memory Module to increase data storage and program memory. One memory module contains 64 data storage registers or up to 400 lines of program memory. The new Quad Memory Module contains 256 registers or up to 1600 program lines. With four memory modules or one Quad Memory Module you can expand your HP-41C memory up to 2,000 program lines or 319 data registers, or any combination—the equivalent of the HP-41CV.* And when plugged into the HP-41C, the modules become an integral part of the calculator's own Continuous Memory. They, too, retain programs and data continuously, even while power is turned off.

The Quad Memory Module and Memory Modules are a low cost way of expanding your HP-41C to meet your increasing computational needs.

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*Neither the HP-41C nor the HP-41CV memory capacity can exceed 319 registers. Users should not plug memory modules or Quad Memory Modules into an HP-41CV. Users should not plug more than one Quad Memory Module into the HP-41C. Exceeding the memory capacity of your HP-41 may damage your calculator.

THE HP 82143A PRINTER/PLOTTER

This whisper-quiet thermal printer/plotter easily plugs into the calculator. The printer/plotter gives you numeric, upper- and lower-case alpha, double-wide characters, plotting capability, and intensity control for optimum contrast and readability. It even allows you to define your own "special" characters. Portable and lightweight, the HP-41 Printer/Plotter operates on batteries or ordinary house current, working when and where you need it. The printer/plotter is a valuable aid in editing programs or checking long calculations. You see everything at once, clearly on tape.

THE HP 82120A RECHARGEABLE BATTERY PACK

The multipurpose Rechargeable Battery Pack provides a reliable, renewable power source designed for the power demands of the HP-41 and its system peripherals. Naturally, frequent peripheral use causes increased power consumption. The multipurpose Rechargeable Battery Pack, used in place of the standard battery case and disposable batteries, furnishes extended operating life, particularly convenient when using the HP-41 peripherals. The pack recharges either while installed in or removed from the calculator, doubling its convenience and affording you both a reserve power pack *and* a multipurpose Rechargeable Battery Pack. You need never lose power.

A STANDARD FOR PROFESSIONALS

Obviously, the HP-41 is more than just a calculator and more than just a system. It combines problem-solving power with flexibility and ease-of-use to produce a personal computational standard for professionals.

The HP-41 springs from a synthesis of state-of-the-art design and traditional Hewlett-Packard human engineering. Every facet of the HP-41 is designed to contribute to the calculator's overall excellence. The alphabetic notations are simple and straightforward, making program labeling flexible with easy-to-remember names.

In addition the keyboard is effortless to operate, with only 58 important functions meeting your eyes. But with alphabetic execution, you have all 130 functions available for instant use in calculations, programs, or the creation of your own personalized keyboard.

Continuous Memory keeps the HP-41 poised and ready for action, saving programs, data and key assignments. You never have to reenter program steps or data because you turned the machine off.

The quick-connect peripherals and modules add to the flexibility of the HP-41 without compromising its portability. And with such complete flexibility of options, you can choose the solution that best fits your needs—now and in the future. The HP-41 calculator. The HP-41 system. The HP-41 standard for professionals. No matter what your profession, it grows as you grow.

THE HP-41C or HP-41CV . . . WHICH ONE FOR YOU?

The unique difference between the HP-41C and HP-41CV is that the HP-41CV has 5 times more memory built-in. Specifically, it contains 319 storage registers versus 63 storage registers in the HP-41C. For those of you who have programming experience, the HP-41CV gives you the memory capacity to store a host of programs continuously. And with all this memory built-in, you have four free ports to add the peripherals of your choice, making your system even more powerful and versatile.

If you are new to programming or your needs do not require full memory capabilities immediately, start with the HP-41C. As your need for memory increases, add a Quad Memory Module or up to 4 memory modules to meet your increasing computational needs.

SOFTWARE PROVIDES SOLUTIONS

Custom Solutions

Do you have groups of employees, customers, clients, or fellow professionals who need on-the-spot answers to long, complex, or repetitious calculations? If so, Hewlett-Packard may have a solution for you... a custom solution! One which features the software you have developed to address your precise problem.

With HP's new **Custom Services** program you can select from three software media, produced to your software or data specifications: Custom Application Module, (which can provide more than 20,000 program steps), Magnetic Card or Bar Code. And, for keyboard personalization, you can use a Custom Overlay.

Is a **Custom Solution** expensive? Not at all. For as little as $40.00* over the cost of the basic HP-41, you can tailor a solution for your organization which combines the speed and accuracy of a computer with the portability, low cost and push-button simplicity of a calculator. The exact cost varies with the custom service selected and the number of calculators desired.

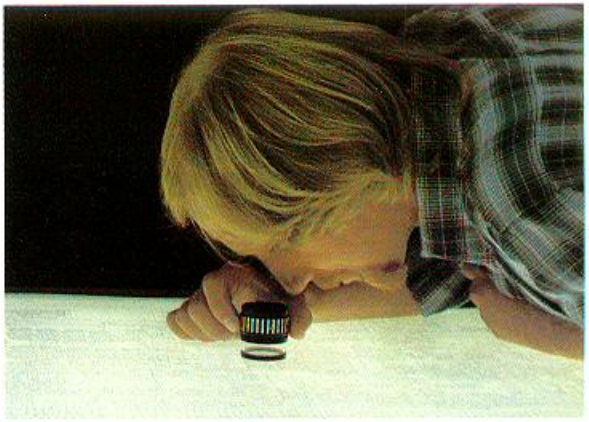
Many companies are already using a customized HP-41 to solve their unique problems from diamond sales to crop dusting, from media buying to heavy equipment sales and service.

For more information, write or call and ask for our special brochure about **Custom Services.**

*Based on a quantity of 500.

Hewlett-Packard Software Solutions

The outstanding features of the HP-41 allow you the freedom to focus on solutions. And Hewlett-Packard helps provide those solutions with unparalleled software support. You may find the solutions in your field in the form of Application Pacs or Solutions Books. HP-41 software has been carefully designed to effectively increase your problem-solving potential by adding power and flexibility to your calculator. HP-67 and HP-97 magnetic card pacs are compatible too, although some programs require additional memory modules. Whatever your professional needs, HP software will increase the versatility of the HP-41 and improve your personal decision-making.



APPLICATION MODULES

Hewlett-Packard offers you solutions to your specific professional problems with the preprogrammed applications modules. Each application module transforms the HP-41 into an answer machine for a particular discipline; a specific calculator for specific needs. Every application module comes in a Pac with a comprehensive manual. Many include keyboard overlays. Simply install the module and overlay to put the combined problem-solving power of the HP-41 and the modules' functions and programs to work.

HP-41 Application Pacs: A Choice of 16

Mathematics (00041-15003)
Matrix Operations
Solution to f(x)=0 on an Interval
Polynomial Solutions/Evaluation
Numerical Integration
Differential Equations
Fourier Series
Complex Operations
Hyperbolics
Triangle Solutions
Coordinate Transformations

Clinical Lab and Nuclear Medicine (00041-15024)
Clinical Chemistry
- Beer's Law
- Body Surface Area
- Creatinine Clearance
- Blood Acid-Base Status
- Oxygen Saturation and Content
- Red Cell Indices

Nuclear Medicine
- Total Blood Volume
- Thyroid Uptake
- Radioactive Decay Corrections

Radioimmunoassay
Statistics
- Basic Statistics
- Chi-square Evaluation and Distribution
- t Statistics
- t Distribution

Circuit Analysis (00041-15006)
General Network Analysis
Ladder Network Analysis

Financial Decisions (00041-15004)
Compound Interest Solutions
Internal Rate of Return
Modified Internal Rate of Return (FMMR)
Net Present Value
Loan Amortization Schedules
Depreciation Schedules
Bond Price and Yield
Days between Dates

Securities (00041-15026)
Bond/Note Price and Yield
Routines for Option Writers Using the Black-Scholes Evaluation Method
Warrant and Option Hedging
Yield on Call Option Sales
Butterfly Options
Bull Spread Option Strategy
Convertible Bond Investment Analysis
Stock Portfolio Valuation
Bond Speculation Using Margin
Convertible Security Analysis

Statistics (00041-15002)
Basic Statistics for Two Variables
Moments, Skewness and Kurtosis
Analysis of Variance (One Way)
Curve Fitting (Linear, Exponential, Logarithmic and Power Curve)
Multiple Linear Regression
Polynomial Regression
t Statistics
Chi-square Evaluation
Contingency Table
Spearman's Rank Correlation Coefficient
Normal and Inverse Normal Distribution
Chi-square Distribution

Stress Analysis for Mechanical Engineers (00041-15027)
Section Properties
Beams
Simply Supported Continuous Beams
Columns
Mohr Circle Analysis
Strain Gage Data Reduction
Soderberg's Equation for Fatigue
RPN Vector Calculator

Structural Analysis for Civil Engineering (00041-15021)
Section Properties
Beams
Simply Supported Continuous Beams
Settling of Continuous Beams
Continuous Frame Analysis
Steel Column Formula
RPN Vector Calculator
Reinforced Concrete Beams
Concrete Columns
Effective Moment of Inertia for Concrete Sections

Surveying (00041-15005)
Traverse, Inverse and Sideshots
Compass Rule Adjustment

Transit Rule Adjustment
Intersections
Curve Solutions
Horizontal Curve Layout
Vertical Curves and Grades
[redacted]section
[redacted]redetermined Area
Volume by Average End Area
Volume of a Borrow Pit
Coordinate Transformation

Home Management (00041-15023)
Financial Records
- Home Budgeting
- Travel Expense Record
- Stock Portfolio Evaluation
- Checking Account Reconciliation

Financial Calculations
- Your Financial Calculator
- Accumulated Interest and Remaining Balance

Home Ownership
- Home Owner's Equity Analysis
- The Rent or Buy Decision

Personal Investments
- Tax Free Individual Retirement Account (IRA) or Keogh Planning
- The True Cost of an Insurance Policy

Games (00041-15022)

Submarine Hunt	Pinball
Space War	Craps
Super Bagels	Biorhythms
Hangman	Random Number Generator

Machine Design (00041-15020)
Circular Cams
Generation of a Four Bar Linkage
Progression of Four Bar System
[redacted]rogression of Slider Crank
[redacted]ear Forces

Standard External Involute Spur Gears
Helical Spring Design
Forced Oscillator with Arbitrary Function
Coordinate Transformation
Points on a Circle
Circle by Three Points
Unit Conversions

Thermal and Transport Science (00041-15019)
Equations of State
Polytropic Processes for an Ideal Gas
Isentropic Flow for Ideal Gases
Conduit Flow
Energy Equation for Steady Flow
Heat Exchangers
Black Body Thermal Radiation

Aviation (00041-15018)
Flight Management
General Aircraft Weight and Balance
Flight Plan
Determining In-flight Winds
Position by One or Two VORS
Mach Number and True Airspeed

Navigation (00041-15017)
Great-Circle Course and Distance
Great-Circle Position
Rhumb-Line Course and Distance
Rhumb-Line Position
Great-Circle Plotting and Voyage Planning
Dead Reckoning
Sight Reduction
Perpetual Almanac-Stars, Sun, Planets, Moon
Almanac Interpolater
Sight Reduction Table
Calendar Functions
Greenwich Sidereal Time
Star Almanac
Fundamental Arguments
Astronomical Coordinate Conversion
Longitude to Latitude
Input/Output Routines

Real Estate (00041-15016)
Compound Interest and Loan Amortization
Modified Internal Rate of Return
Depreciation Schedules
Income Property Analysis
Graduated Payment Mortgage
Wrap-Around Mortgage
Home Owner's Equity Analysis
The Rent or Buy Decision

Application Pac titles and program listings subject to change without notice.

HP-41 Solutions Books: A Library of 26 Books

HP-41 Solutions Books provide complete step-by-step keystroke listings, to help provide you with programs to solve your general or specialized problems.

BUSINESS

Business Statistics/Marketing/Sales (00041-90094)
Forecasting Using Exponential Smoothing
Seasonal Variation Factors (SEVAR)
Multiple Linear Regression
Normal, t and f Distributions
Basis Statistics for Two Variables
Moving Average
Breakeven Analysis
Gompertz Curve and Trend Analysis
Experience (Learning) Curve for Manufacturing Cost
Price Elasticity of Demand

Home Construction Estimating (00041-90096)
Concrete Volume
Linear to Board Feet Conversions and Costing
Framing Board Feet
Lumber Estimate
Shingle Estimate
Wall and Ceiling Areas Estimate
Wallpaper Estimate
Drywall and Insulation Estimate
Sheathing and Subfloor Estimate
Painting Estimate
Wood Floor Estimate

Small Business (00041-90137)
Hourly Payroll
Invoicing
Account Posting
Tabulator
Retail Inventory Monitor
Estimating Inventory
Inventory Ordering
Order Point Calculations
Working Capital Needs—Bardahl Formula
Depreciation Schedules
Breakeven Analysis

Lending, Savings and Leasing (00041-90086)
Constant Payment to Principal Loan
Rules of 78's
Amortization Schedule
Add-on to APR with Odd Days
Savings Plan
Interest Conversions
Lease with Additional Payments in Advance
Skipped Payments
Compounding Periods Different from Payment Periods
Compound Interest Solutions

Real Estate (00041-90136)
Income Property Analysis
Wrap-Around Mortgage
Amount of Equity at Any Time
Mortgage Yield
Mortgage Pricing
Investment Analysis for Property and Land
Residential Analysis (Rent or Buy)
Variable Analysis of Real Estate Investment
Internal Rate of Return (IRR)
Ellwood Income Valuation for Income Property Appraisal

COMPUTATION

Geometry (00041-90084)
Sine Plate Solutions
V Notches and Long Radii
Internal and External Tapers
Points of Tangency with Circles and Arcs
Line-Line Intersection
Points on a Straight Line
Grid of Points: Calculates All Points
Grid of Points: Calculates Discrete Points
Tangent Circle to Two Straight Lines with a Given Radius
Distance Between Lines in Space

High-Level Math (00041-90083)
Sine, Cosine, Exponential Integrals
Eigen value/vectors of 3rd Order Systems
Eigen values for 3rd Order System
Chebyshev, Legendre, Hermite, and Laguerre Polynomials
Sixteen-Point Gaussian Quadrature
Gamma Function
Bessel Functions, Error Function
Characteristic Equation of a 4 x 4 Matrix
4 x 4 Matrix Operations

Test Statistics (00041-90082)
One Sample Test Statistics for the Mean
Test Statistics for the Correlation Coefficient
Differences Among Proportions
Behrens-Fisher Statistic
Kruskal-Wallis Statistic
Mean-Square Successive
The Run Test for Randomness
Intraclass Correlation Coefficient
Fisher's Exact Test for a 2 x 2 Contingency Table
Bartlett's Chi-Square Statistic
Mann-Whitney Statistic
Kendall's Coefficient of Concordance

ENGINEERING

Antennas (00041-90093)
Loaded Vertical Antennas
Loaded Dipole Antennas
Gain of a Horizontal Rhombic Antenna at Zero Azimuth
Azimuth Pattern of Cylindrical Array of Antennas
Colinear Antenna Gain and Pattern
Beam Pattern for Uniform Array
Radar Antenna Beamwidth and Gain
Antennas
Parabolic Antenna Calculations
RF Path Loss, dB
Antenna Gain or Power of a Remote Transmitter
Planar Phased Array Radar Beam Positions
Short Wave Transmission Path Calculations

Chemical Engineering (00041-90100)
Straight Fin Efficiency
Conservation of Energy
Hydrocarbon Combustion
Heat Transfer through Composite Cylinders and Walls
Von Karman Analogy for Heat and Mass Transfer
Equations of State
Reversible Polytropic Process for an Ideal Gas
Conduit Flow
Fluid Transport Numbers
Single Stage Equilibrium Flash Calculation
Weak Acid/Base Titration Curve

Civil Engineering (00041-90089)
Steel Column Formula
Reinforced Concrete Beams
Stress in Thick-Walled Cylinders
Properties of Special Sections
Compressive Buckling
Vectors
Beams Fixed at Both Ends
Simply Supported Beams
Cantilever Beams
Bolt Torque

Control Systems (00041-90092)
Frequency Response of a Transfer Function
Bode of Transfer Function that has Each Pole and Zero Given
Bode of Third-Order Over Fourth-Order Transfer Function
Bode of Third-Order Over Third-Order Times S**N Transfer Function
Routh Test for Continuous and Discrete Time System Stability
Convert Frequency Response—Open Loop, Closed Loop
Aid to Root Locus Plots I—Real Poles
Aid to Root Locus Plots II—Complex Poles
Classical Control Gains
First Order Regulator
Second Order Regulator

Electrical Engineering (00041-90088)
RC Timing
Frequency Response of a Transfer Function
Transistor Amplifier Performance
Class A Transistor Amplifier Bias Optimization
Active Filter Design
Butterworth Filter Design
Chebyshev Filter Design
Bode Plot of Butterworth and Chebyshev Filters
Transmission Line Calculation
Transmission Line Impedance

Fluid Dynamics and Hydraulics (00041-90139)
Conduit Flow
Flow with a Free Surface
Pipe Slide Rule
Forces at Bends and Fittings
Valve Sizing
Pipe Network Analysis
Restriction Metering Orifice Calculation
Energy Equation for Steady Flow
Compressible Flow in Ducts
Flood Routing and Hydrographs

Heating, Ventilating, and Air Conditioning (00041-90140)
Overall Heat Transfer Coefficient
Insulation Break Even Analysis
Air Flow in Circular Ducts
Air Duct Conversion
Equations of State
Black Body Thermal Radiation
Psychometric Properties
Heat Exchangers
Decibel Addition and Subtraction
Temperature Conversions

Mechanical Engineering (00041-90090)
Gear Forces
Stress on an Element
Equations of State
Soderberg's Equation for Fatigue
Spring Constant

Progression of a Slider Crank
Free Vibrations
Interference Fits
Linear or Angular Deformation
Constant Acceleration

Solar Engineering (00041-90138)
Solar-Beam Irradiation
Sun Altitude, Azimuth, Solar Pond Absorption
Energy Equivalents—Fuels and Prices
Heat Exchangers
View Factor
Heat Transfer through Composite Cylinders and Walls
Black Body Thermal Radiation
Economic Breakeven for Solar Equipment
Solar Panel Array
Conduit Flow

OTHER

Calendars (00041-90145)
Calendar Date/Julian Date Conversion
Day of Year—Day of Week
Number of Weekdays Between Two Dates
In What Year is a given Date an M-Day
Number of M-Days between Two Dates and
Nth M-Day of Month
Holidays
Religious Holidays
Chinese Years to/from Gregorian Years
New Moon and Full Moon Day of Month
Calendar Printout

Cardiac/Pulmonary (00041-90097)
Pulmonary Functions/Vital Capacity
Body Surface Area
Blood Chem I
Blood Chem II
Cardiac Outputs
Cardiac Shunts
Conractility and Stroke Work
Lung Diffusion
Valve Area
Ventilator Setup and Corrections (Radford)

Chemistry (00041-90102)
pH of Weak Acid/Base Solutions
Acid-Base Equilibrium (Diprotic)
Weak Acid/Base Titration Curve
Equations of State
Van Der Waals Gas Law
Beer's Law and Absorbtivity Calculations
Activity Coefficients from Potentiometric Data
Crystallographic to Cartesian Coordinate Transformations
Kinetics using Lineweaver-Burk or Hofstee Plots
Mixture Viscosities

Games (00041-90099)

Hexapawn	Orbital Lander
Wari	Flip Flop
Wumpus	Robot Trap
3-D Tic Tac Toe	Scatter
Planet Lander	Simon

Optometry I (General) (00041-90143)
Aniseikonia
Crossed Prism Resultant
Oblique Cylinder Sum
Acuity Demand from Letter Size and Working Distance
Contact Lens, Telescope Calculations
Calculation of Needed Magnification, Add,
and Working Distance
Effective, Equivalent and Neutralizing Power
Positional Effective Power
Pratt, Sheard, Percival Methods of Near R_X
Four Accomodative R_X's and their Average

Optometry II (Contact Lens) (00041-90144)
Back Vertex Power of PMMA Contact Lens
Effective Power of Spectacle Lenses at Corneal Plane
Residual Cylinder Induced at Tear/Cornea Interface
by Contact Lens
Cylinder Induced by Toric Contact Lens
Contact Lens Power Necessary to Correct Ametropia
Toric Contact Lens Parameters
Tabb Contact Lens of 1st Approximation
May-Grant Contact Lens of 1st Approximation
Roggenkamp Specifications for Prism
Ballast Front Toric or Prism Ballast Contact Lens
Brungardt I
Brungardt II

Surveying (00041-90141)
Spiral Curve Layout
Two-Instrument Radial Survey
EDM Slope Reduction
Stadia Reduction
Three Wire Leveling
Azimuth of the Sum
Taping Reduction
Triangle Solutions
Traverse for Auto Adjust Routines
Auto Adjust for Compass Rule
Auto Adjust for Crandall's Rule

Physics (00041-90142)
Black Body Thermal Radiation
Black Hole Characteristics
Special Relativity Conversions
Three-Dimensional Special Relativity
Einsteins Twin Paradox
Delta-V Orbit Simulator
Equations of Motion
Isotope Overlap Corrections
Semi-Empirical Nuclear Mass Formula
Clebsch-Gordon Coefficients and 3j Symbols Evaluation
32-P Remaining on Day of Year

Taxes (00041-90338)
1980 Alternative Minimum Tax—Joint Returns
1980 Maximum Tax—Joint Returns
1980 Single Taxpayers Income Averaging, Tax Table A and Schedule Z
1980 Married Individuals Income Averaging, Tax Tables B and C, Tax Rate Schedule Y
1980 Head of Household Income Averaging Tax Table D and Tax Rate Schedule Z
1980 New Jobs Credit
1980 Estates and Trusts Tax Rate Schedule, State Death Taxes Credit Table, Estate and Gift Tax Table
1980 Corporate Tax Schedule

(Solutions Book titles and program listings subject to change without notice)

HP-67/97 Application Pacs:

An Added Bonus

Because the HP-41 is compatible with the HP-67 and HP-97*, you may also choose from 10 application pacs written for the HP-67/97. These application pacs contain preprinted, prerecorded program cards to help save you programming time.

THE USERS' LIBRARY

The User's Library makes available to you a vast collection of individual programs, each written by an HP user. By subscribing to the Users' Library, you'll have at your fingertips literally thousands of different programs. For a nominal one-year subscription fee, you receive: a catalog of contributed programs, periodic catalog updates and a coupon for 3 free programs of your choice.

*Requires HP 82104A Card Reader; some Pacs, when using the HP-41C, require additional memory modules to accommodate all programs.

HP-41 Accessories: Those Needed Extras

As an added support feature, HP offers a complete line of hardware accessories for the HP-41. Keep your calculator at peak operating efficiency with:

HP-41 Accessories
82111A Vinyl Case
82152A Overlay Kit
82151A Module Holder
00041-14001 Standard Applications Module
82120A Multipurpose Rechargeable Battery Pack

Printer Accessories
82045A Thermal Paper
82033A Battery Pack
82059B Recharger
82066B Recharger (Euro 220V)
82044A Security Cable
82037A Reserve Power

Card Reader Accessories
00097-13141 40 Blank Cards (with Holder)
00097-13143 120 Blank Cards (with Holders)
00097-13206 1000 Blank Cards
00097-13142 3 Card Holders

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