hp calculators

HP 9s Introduction to the Learning Modules

Use of the Learning Modules

The HP 9s Learning Modules

Use of the learning modules

HP provides these learning modules to help readers learn about the HP 9s, or to gain experience in its use. They complement the handy, concise manual included with the calculator, and offer a hands-on way to try some of the many HP 9s features. Readers who do not have an HP 9s but wish to learn about it can benefit by studying these aids too. These documents can be printed on a black and white printer with no loss of information.

The learning modules start with a brief introduction to the topic, whose purpose, far from being a substitute for a good textbook, is to provide a summary of the main concepts that will later be demonstrated by the examples. Definitions, main theorems and properties are stated as clearly and concisely as possible.

The examples are the essential part of the learning modules. Their purpose is to demonstrate the capabilities of the calculator by providing the reader with ways of solving the commonest problems. They are provided purely for practice and do not represent any real situations or people, though.

Special symbols are used to show the sequence of keystrokes that perform the calculation. The four keys F↔E, 2ndF, ON/C and ENG are shown as F↔E , 2ndF , ON/C and ENG . Shifted keys (i.e. blue legends on the HP 9s keyboard that are pressed after the 2ndF key) are shown as they appear on the keyboard. For example to get the exponential function, e^x, it is necessary to press the shift key 2ndF and then the ln key. This would be shown in the learning modules as 2ndF e^x E .

Statistical functions in purple on the keyboard and hexadecimal digits A through F are shown as if they were primary keys because pressing 2ndF is not necessary (except for the *boxed* functions). For example, the sequence π A $\sqrt{\ }$ B $\sqrt[3]{\ }$ C would key in the number ABC in HEX mode.

The learning modules assume that the HP 9s modes and settings are as they would be when a new HP 9g is turned on the first time. Changes to these settings needed for examples are described in the modules. After some examples have been worked through, the HP 9s settings might be very different from the original ones. A quick way to return to the standard settings is to perform a Memory Clear (refer to the learning module *Clearing, Editing and Correcting*), but note that this will clear all of the calculator memory: press the M+ and ENG keys at the same time if the calculator does not respond to keystrokes.

But remember, DO NOT DO THIS IF YOU WANT TO KEEP ANY PROGRAMS, EQUATIONS OR DATA THAT ARE IN YOUR CALCULATOR. If you want to keep what is in memory but return the settings to their original values, you will have to change the settings one by one.

The HP 9s learning modules

- Basic Arithmetic
  Practice Doing Arithmetic.
- Operating Modes and Display Format
  The Operating Modes of the HP 9s. The Angular Mode. Display Format.
- Clearing, Editing and Correcting
  Resetting and Clearing. The Exchange Key. Editing and Correcting Statistical Data.

- Memory Calculations
  The Memory Keys. Practice Using the Memory to Solve Problems.
- Logarithmic Functions
  Logarithms and Antilogarithms. Practice Solving Problems Involving Logarithms.
- Solving Trigonometry Problems
  The Trigonometric Functions. The Angular Unit. Practice Solving Problems Involving Trigonometric Functions.
- Hyperbolic Functions
  Hyperbolic Functions. Practice Using Hyperbolic Functions.
- Powers and Roots
  Powers and Roots. Practice Solving Problems Involving Powers and Roots.
- Solving Problems Involving Percents
  Percentages. Practice Working Problems Involving Percentages.
- Solving Problems Involving Fractions
  Basic Concepts. Fractions on the HP 9s. Practice Working Problems Involving Fractions.
- Solving Problems Involving Unit Conversions
  Metric Units and Imperial Units. Unit Conversions on the HP 9s. Practice Working Problems Involving Conversions.
- Solving Problems Involving Complex Numbers
  Basic Concepts. Practice Solving Problems Involving Complex Numbers
- Statistics – Averages and Standard Deviations
  Average and Standard Deviation. Practice Finding Averages and Standard Deviations.
- Probability – Rearranging Items
  Rearranging Items. Practice Solving Problems Involving Factorials, Permutations, and Combinations.
- Base Conversions and Arithmetic
  Numbers in Different Bases. The Binary, Octal and Hexadecimal Modes. Practice Working with Numbers in Different Bases.
- Polar/Rectangular Coordinate Conversions
  Rectangular and Polar Coordinates. Practice Solving Problems Involving Coordinate Conversions.
- Solving Compound Interest Problems
  Compound Interest. Practice Solving Compound Interest Problems.
- Converting Angles and Times
  Angle Measurements. Time Measurements. Practice Solving Problems Involving Angles and Times.
- Statistics – Process Capability
  Process Capability. Practice Solving Process Capability Problems.