

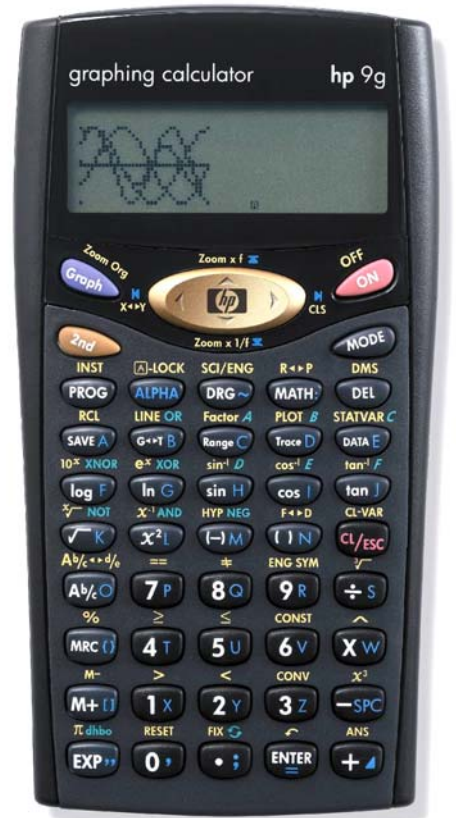


## hp calculators

HP 9g Introduction to the Learning Modules

Use of the Learning Modules

The HP 9g Learning Modules

















## Use of the learning modules






HP provides these learning modules to help readers learn about the HP 9g, 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 9g features. Readers who do not have an HP 9g 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 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 cursor keys, up, down, left and right, are shown as  $\wedge$ ,  $\vee$ ,  $\blacktriangleleft$  and  $\blacktriangleright$ , respectively. The keys next to them, Graph, 2nd, ON and MODE are shown as , ,  and . Shifted keys (i.e. gold keys on the HP 9g keyboard that are pressed after the 2nd 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  and then the  key. This would be shown in the learning modules as  .

The HP 9g uses the letters A through Z as the names of variables. When a key is pressed that needs a letter after it, the annunciator A is shown at the bottom of the screen. When this symbol is shown, keys with letters to their right return those letters when pressed. These keys are also shown in these learning modules as they appear, e.g. the sequence       would display the letters ABC in Main mode.

The learning modules assume that the HP 9g 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 9g 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 sequence   , or the keys  and  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 9g learning modules

- ◆ Basic Arithmetic  
Practice Doing Arithmetic.
- ◆ Operating Modes and Display Format  
The MODE Key. The MAIN Mode. The STAT Mode. The BaseN Mode. The PROG Mode. The Angle Mode.  
Display Format

- ◆ Clearing, Editing and Correcting  
Resetting and Clearing Memory. Editing and Correcting the Entry Line. Practice Editing the Entry Line
- ◆ Using Memories to Solve Problems  
The Running Memory and the Standard Memory Variables. Array Variables and the Defm Command. Practice Using Memories
- ◆ Logarithmic Functions  
Log and Antilog Functions. Practice Solving Problems Involving Logarithms
- ◆ Solving Trigonometry Problems  
The Trigonometric Functions. The Angle Mode. 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 9g. Practice Working Problems Involving Fractions
- ◆ Solving Problems Involving Unit Conversions  
Metric Units and Imperial Units. The CONV Menu. Practice Working Problems Involving Conversions.
- ◆ Solving Problems Involving Complex Numbers  
Basic Concepts. Practice Solving Problems Involving Complex Numbers. Practice Example: Roots of a Cubic Equation.
- ◆ Statistics – Averages and Standard Deviations  
Average, Standard Deviation and other Statistics. 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 Base-N Mode. 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.
- ◆ Graphing Functions – Part 1  
Built-in Function Graphs. Using Your Own Settings. Overlaying Graphs. Plotting Your Own Functions.
- ◆ Graphing Functions – Part 2  
Tracing Graphs. The Zoom Function. Examples of Statistical Graphs.
- ◆ Probability – Random Numbers  
Random Numbers. Simulation. Practice Using Random Numbers for Simulations.
- ◆ Using the Built-in Physical Constants  
The CONST Menu. Practice Solving Problems Involving Physical Constants.
- ◆ Logical Operations with Base-N Numbers  
Numbers in Different Bases. The Base-N Mode. Logical Operations with Base-N Numbers.
- ◆ Writing a Small Program  
Programming the HP 9g. Practice Example: Fibonacci Numbers. Practice Example: Number of Days Between Dates.

- ◆ Statistics – Linear Regression  
Linear Regression. Practice Solving Linear Regression Problems.
- ◆ Statistics – Non-Linear Regression  
Non-Linear Regression. Practice Solving Non-Linear Regression Problems.
- ◆ Statistics – Normal Distribution  
The Normal Distribution. Practice Solving Normal Distribution Problems.
- ◆ Statistics – Process Capability  
Process Capability. Practice Solving Process Capability Problems.
- ◆ Solving Problems Involving Equations  
“Equation” Programs on the HP 9g.