

PROGRAM MEMORY (Maintained by Continuous Memory)

Top-of-memory marker.

98 steps for your program instructions.

HP-29C	
00	
01	74
02	74
03	74
98	74

In program mode, only the following functions are active. All other functions are loaded into program memory when pressed.



PRT PRGM Print program (HP-19C). Prints step number and operation beginning at the current step and continuing until two R/S instructions or step 98 is encountered.

GTO \square \square \square sets calculator to step nn of program memory.

SST Single step. Moves calculator forward one step in program memory.




BST Back step. Moves calculator back one step in program memory.

DEL Delete. Deletes current instruction from program memory. All subsequent instructions move up one step.

CLEAR  Clears program. Clears program memory to all  instructions, sets calculator to step 00.

CLEAR **PREFIX** Clear prefix. After **f**, **9**, **STO**, **STO** **◻**, **RCL**, **RCL** **◻**, **GTO**, or **GSB** cancels that key.

Pressed from the Keyboard:

GTO    sets the calculator to step nn of program memory.

GRO followed by a label designator (**0** through **9**, **I**) causes calculator to search downward through program memory to the first designated label and stop there.

GSB followed by a label designator (0 through 9, I) causes calculator to search downward through program memory to the first designated label and execute that section of program memory as a subroutine.

RTN sets calculator to step 00 of program memory.

[R/S] begins execution from current step of program memory.
Stops execution if program is running.



Any Key. Pressing any key on the keyboard stops execution of a running program. Execution cannot be stopped during digit entry.

Some functions that are active in PROGRAM mode operate differently in RUN mode:

SST single step. Displays step number and keycode of current program memory step when held down; executes current instruction, displays result, and moves to next step when released. Used for single-step execution of program.

BS Back step. Moves to previous step and displays step number and keycode of that previous memory step when **BS** is held down; displays original contents of X-register when released. No instructions are executed.

DEL Cancels the **9** prefix key.

CLEAR  Cancels the  prefix key.

Executed in a Program:

Function keys may be executed as instructions in a program. Some function keys that are most often used in or are unique to programming applications are shown below:

0 1 2 3 4 5 6 7 8 9 Label designators. When preceded by **LBL**, define beginning of routine. When preceded by **GTO** or **GOSB**, cause calculator to stop execution, search downward through program memory to first designated label, and resume execution there.

PAUSE Stops program execution for 1 second, displays contents of X-register, then resumes program execution.

X=Y **X>Y** **X<Y** **X=0** **X>0** **X<0** **X≠0** Conditionals. Each tests value in X-register against 0 or value in Y-register as indicated. If true, calculator executes instruction in next step of program memory. If false, calculator skips one step before resuming execution.

RTN Return. If executed as result of pressing a label designator or executing a **GTO** instruction, stops execution and returns control to keyboard. If executed as a result of a **GSE** instruction, returns control to next step after the **GSE** instruction.

R/S Run/stop. Stops program execution.

GTO Go to. Followed by label designator (0 through 9), causes calculator to search downward through program memory to first designated label and begin execution there.

GSB Go to subroutine. Followed by label designator (**0** through **9**, **I**), causes calculator to search downward through program memory to first designated label and execute that section of program memory as a subroutine. Subroutines can be nested up to three levels deep.

HP-19C PRINTER FUNCTIONS

PRTPRGM Print program. Prints the step number, mnemonics and keycodes (if in MAN or NORM) for each step of program memory, beginning with the current step and continuing until two R/S instructions or step 98 is encountered.

PRINT Print statistical registers. Prints the contents of the six statistical registers (R.₀ through R.₅).

PRT STK Print stack. Prints the contents of the automatic memory stack registers (T, Z, Y, X).

PRINT REG Print registers. Prints the contents of all storage registers (R_0 through R_9 , R_{-0} through R_{-5} , $R_{(16)}$ through $R_{(29)}$).

PRX Print X-register. Prints the value in the displayed X-register.

SPC Space. Advances the printer paper one or more spaces without printing.

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