

The calculator automatically converts one storage register into seven lines of programming, one at a time as you need them, beginning with $R_{.9}$ and ending with R_{7} .

STO j or **STO . j** stores x value in R_j or $R_{\cdot j}$.

RCL j or **RCL**.**j** recalls value from R_j or $R_{\cdot j}$.

STO + **j**, **STO** - **j**, **STO** \times **j**, **STO** + **j**: x value is added to, subtracted from, multiplied by, or divided into the contents of R₃, and the result is placed in R₃. Storage registers R₀ through R₆ are reserved for storage register arithmetic.

f CLEAR ALL clears all registers to 0.00. Leaves program memory unchanged.

SUMMATIONS

f CLEAR Σ clears statistical registers R_1 through R_6 to 0.00.

(Σ **+**) stores accumulations of numbers in the X- and Y-registers in storage registers R_1 through R_6 .

9 E- subtracts same entries from accumulations.

FINANCIAL INTEREST CALCULATIONS

f CLEAR FN clears financial registers to 0.00.

RCL followed by a financial key (**n**, **i**, **PV**, **PMT**, **FV**) recalls that value into the display.

Rules to Remember:

- 1. Given four of the financial values, you can solve for the fifth. Unspecified values maintain a value of zero or last value entered after clearing. Remember, n and i must correspond to the same time frame.
- The cash flow sign convention: Cash received is positive, cash paid out is negative.
- Whenever payments *PMT* are involved, be sure to set the payment switch *DMY BEGIN END*.

SIMPLE INTEREST

Store number of days in **n**, annual interest rate in **i**, and principal in **PV**. Pressing **f INT** returns:

- INT₃₆₀ to X-register.
- Principal to Y-register; press xzy.
- INT₃₆₅ to Z-register; press **9 R X X X Y**.

AMORTIZATION

Input i, PV, and PMT. Then key in number of periods to be amortized and press [AMORT. Returns:

- Accumulated interest to X-register.
- Principal portion of payments to Y-register; press xzy.
- Remaining balance to **PV** register.
- Number of periods amortized to n register.

DISCOUNTED CASH FLOW ANALYSIS

9 CF_0 stores initial investment in R_0 and sets $\[n]$ register to zero.

9 CF₁ stores CF_1 thru CF_9 in R_1 thru R_9 , CF_{10} thru CF_{19} in $R_{\cdot 0}$ thru $R_{\cdot 9}$. Increments **n** by one.

9 N stores number of times (up to 99) each cash flow occurs.

Reviewing Cash Flows:

- 1. Individual cash flows.
 - a. RCL 9 CF₁ recalls CF₁ entries in opposite order.
 - b. RCL j or RCL \cdot j recalls cash flow stored in R_j or R_j.
- 2. Groups of cash flows.
 - a. RCL 9 N RCL 9 CF recalls entries in opposite order.
 - b. jn RCL 9 CF₁ recalls the jth cash flow.
 - c. jn RCL 9 N recalls the jth N_j value.

Changing Cash Flow Entries:

To change a CF_j value, key in the new number and press **STO j** or **STO . j** to store new value in R_j or $R_{\cdot j}$.

To change the $j^{\text{th}} N_j$ value, press **j new number 9 N**_j.

Remember to reset \square to the number of CF₁ entries (excluding CF₀), after you review or change cash flows.

PROGRAMMING THE HP-38E

In *program* mode, only the following functions are active and cannot be recorded: 9 P/R, 9 GTO.00 through .99, 9 SST, 9 BST, 9 CLP, and 9 MEM.

9 GTO. 00 through .99 sets calculator to that line of program memory. When a *decimal point* is pressed before the line number is specified, the GTO instruction is *not recorded*.

CLP clears program memory to all
GTO 00 instructions, sets calculator to line 00, and relocates 20 storage registers and eight program lines to calculator memory.

9 MEM specifies number of program lines (P-) and number of storage registers (r-) available within current memory allocation.

 $x \le y$ x = 0 Conditionals. Tests value in X-register against value in Y-register or 0 as

indicated. If true, calculator executes instruction in next line of program memory. If false, calculator skips one line before resuming execution.

ERROR MESSAGES

- **Error 0:** Improper operation involving zero.
- Error 1: Storage register overflow.
- Error 2: Improper data in statistical registers.
- Error 3: Amortization; wrong input to X-register, or IRR; input best guess, press RCL 9 P/S.
- Error 4: Improper memory address.
- Error 5: Compound interest; bad input.
- Error 6: Discounted cash flow analysis; improper input.
- Error 7: IRR; no solution exists.
- Error 8: Calendar; improper input.
- Error 9: Failed self-check (STO ENTER+).



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