

## Changing Cash Flow Entries:

To change a CF<sub>j</sub> value, key in the new number and press **[STO]** **j** or **[STO]** **.j** to store new value in R<sub>j</sub> or R<sub>.j</sub>.

To change the j<sup>th</sup> N<sub>j</sub> value, press **j** **[n]** **new number** **[g]** **[N<sub>j</sub>]**.

Remember to reset **[n]** to the number of CF<sub>j</sub> entries (excluding CF<sub>0</sub>), after you review or change cash flows.

## PROGRAMMING THE HP-38E

In *program* mode, only the following functions are active and cannot be recorded:

**[g]** **[P/R]**, **[g]** **[GTO]** .00 through .99, **[g]** **[SST]**, **[g]** **[BST]**, **[g]** **[CLP]**, and **[g]** **[MEM]**.

**[g]** **[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*.

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

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

**[x<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]** **[g]** **[R/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+]** ).

**Pr Error:** Continuous Memory cleared by power failure. (HP-38C only).



# HP-38E/38C Quick Reference Card

## THE MEMORY

### Automatic Memory Stack

<b>T</b>	0.00	Top
<b>Z</b>	0.00	
<b>Y</b>	0.00	
<b>X</b>	0.00	Always displayed
<b>LAST X</b>	0.00	

### Financial Registers

<b>n</b>	<b>i</b>	<b>PV</b>	<b>PMT</b>	<b>FV</b>
<input type="text"/>				

### Storage Registers

R <sub>0</sub>	<input type="text"/>	R <sub>0</sub>	<input type="text"/>
R <sub>1</sub>	<input type="text"/> n	R <sub>1</sub>	<input type="text"/>
R <sub>2</sub>	<input type="text"/> Σx	R <sub>2</sub>	<input type="text"/>
R <sub>3</sub>	<input type="text"/> Σx <sup>2</sup>	R <sub>3</sub>	<input type="text"/>
R <sub>4</sub>	<input type="text"/> Σy	R <sub>4</sub>	<input type="text"/>
R <sub>5</sub>	<input type="text"/> Σy <sup>2</sup>	R <sub>5</sub>	<input type="text"/>
R <sub>6</sub>	<input type="text"/> Σxy	R <sub>6</sub>	<input type="text"/>
R <sub>7</sub>	<input type="text"/>	R <sub>7</sub>	<input type="text"/>
R <sub>8</sub>	<input type="text"/>	R <sub>8</sub>	<input type="text"/>
R <sub>9</sub>	<input type="text"/>	R <sub>9</sub>	<input type="text"/>

### Program Memory

<b>00</b>	<b>09</b>
<b>01</b>	<b>10</b>
<b>02</b>	<b>11</b>
<b>03</b>	.
<b>04</b>	.
<b>05</b>	.
<b>06</b>	<b>97</b>
<b>07</b>	<b>98</b>
<b>08</b>	<b>99</b>

 The calculator automatically converts one storage register into seven lines of programming, one at a time as you need them, beginning with R<sub>9</sub> and ending with R<sub>7</sub>.

**STO** j or **STO** .j stores x value in R<sub>j</sub> or R<sub>.j</sub>.

**RCL** j or **RCL** .j recalls value from R<sub>j</sub> or R<sub>.j</sub>.

**STO** + j, **STO** - j, **STO** × j, **STO** ÷ j: x value is added to, subtracted from, multiplied by, or divided into the contents of R<sub>j</sub>, and the result is placed in R<sub>j</sub>. Storage registers R<sub>0</sub> through R<sub>6</sub> 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<sub>1</sub> through R<sub>6</sub> to 0.00.

**f** **Σ+** stores accumulations of numbers in the X- and Y-registers in storage registers R<sub>1</sub> through R<sub>6</sub>.

**g** **Σ-** subtracts same entries from accumulations.

## FINANCIAL INTEREST CALCULATIONS

**f** **CLEAR** **FIN** 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.
2. *The cash flow sign convention: Cash received is positive, cash paid out is negative.*
3. Whenever payments **PMT** are involved, be sure to set the payment switch

D.M.Y.  M.D.Y.  
BEGIN END .

## SIMPLE INTEREST

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

- INT<sub>360</sub> to X-register.
- Principal to Y-register; press **xxy**.
- INT<sub>365</sub> to Z-register; press **g** **R+** **xxy**.

## AMORTIZATION

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

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

## DISCOUNTED CASH FLOW ANALYSIS

**g** **CF<sub>0</sub>** stores initial investment in R<sub>0</sub> and sets **n** register to zero.

**g** **CF<sub>1</sub>** stores CF<sub>1</sub> thru CF<sub>9</sub> in R<sub>1</sub> thru R<sub>9</sub>, CF<sub>10</sub> thru CF<sub>19</sub> in R<sub>.0</sub> thru R<sub>.9</sub>. Increments **n** by one.

**g** **N<sub>i</sub>** stores number of times (up to 99) each cash flow occurs.

### Reviewing Cash Flows:

1. Individual cash flows.
  - a. **RCL** **g** **CF<sub>i</sub>** recalls CF<sub>i</sub> entries in opposite order.
  - b. **RCL** j or **RCL** .j recalls cash flow stored in R<sub>j</sub> or R<sub>.j</sub>.
2. Groups of cash flows.
  - a. **RCL** **g** **N<sub>i</sub>** **RCL** **g** **CF<sub>i</sub>** recalls entries in opposite order.
  - b. **j** **n** **RCL** **g** **CF<sub>i</sub>** recalls the j<sup>th</sup> cash flow.
  - c. **j** **n** **RCL** **g** **N<sub>i</sub>** recalls the j<sup>th</sup> N<sub>i</sub> value.