



## hp calculators

### HP 10BII Using Memories

Memories

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**Memories**

The HP 10BII calculator has several storage areas called memories or registers that can be used to simplify solving problems. These memories hold a number for later use.

**The M Register**

The HP 10BII has a memory called the M register that is directly available from the basic keyboard. There are three keys associated with the M register:  $\rightarrow M$ ,  $RM$ , and  $M+$ .

The  $\rightarrow M$  key will store the number presently displayed into the M register. Note that this will overwrite any value previously stored in the M register.

The  $RM$  key will recall the number presently in the M register to the display where it can be used.

The  $M+$  key will add the number presently in the display to the number already in the M register. If pressed repeatedly, it will add the number in the display to the number in the M register each time. This is often used to keep up with a running total.

**Numbered Registers**

The HP 10BII also has 10 memories that are referenced by a number from 0 to 9. These memories are accessed using two keys:  $RCL$  and the yellow-shifted function  $\text{STO}$ .

To store a number in the display into one of these memories, press  $\text{STO}$  followed by a number from  $0$  to  $9$ . Storing a number into a memory will overwrite the previous contents of the memory.

To recall a number from one of these memories to the display where it can be used, press  $RCL$  followed by a number from  $0$  to  $9$ .

**Storage Arithmetic**

The HP 10BII has the ability to perform arithmetic calculations on the values stored in the numbered memories. This is done by pressing  $\text{STO}$ , then one of the arithmetic keys,  $+$ ,  $-$ ,  $\times$ ,  $\div$ , and then a number between  $0$  and  $9$ . For example, to multiply the contents of memory 8 by the number presently in the display, press  $\text{STO}$   $\times$   $8$ . The examples will show ways this can be used.

**Practice using memories to solve problems**

Example 1: Solve  $5 + \left(\frac{4}{9}\right) + \left(\frac{2}{\left(5 + \left(\frac{4}{9}\right)\right)}\right)$

Solution: Since this expression has two terms that are exactly the same, we can compute the value of the expression the first time, save it in a memory and then recall the value for use later in the calculation. Note that the

value of the expression is not computed and shown in the display until after the  $\boxed{+}$  key is pressed in the steps shown below.

$\boxed{5} \boxed{+} \boxed{\text{MC}} \boxed{(} \boxed{4} \boxed{\div} \boxed{9} \boxed{\text{MC}} \boxed{)} \boxed{+} \boxed{\rightarrow M} \boxed{\text{MC}} \boxed{(} \boxed{2} \boxed{\div} \boxed{RM} \boxed{\text{MC}} \boxed{)} \boxed{=}$

Answer: 5.81. Note that the closing parentheses just before the  $\boxed{=}$  are not necessary. Pressing  $\boxed{=}$  will close all open parentheses automatically.

Example 2: Find the sum of 90, 85, 70, 60 and 40 using the M register.

Solution:  $\boxed{9} \boxed{0} \boxed{\rightarrow M} \boxed{8} \boxed{5} \boxed{M+} \boxed{7} \boxed{0} \boxed{M+} \boxed{6} \boxed{0} \boxed{M+} \boxed{4} \boxed{0} \boxed{M+} \boxed{RM}$

Answer: 345. Note that while it would certainly be possible to find this answer by just adding the numbers together, the process illustrated here is certainly much easier when the sum of several complicated individual calculations is needed.

Example 3: Find the product of 90, 85, 70, 60 and 40 using the memory 4.

Solution:  $\boxed{9} \boxed{0} \boxed{\text{MC}} \boxed{\text{STO}} \boxed{4} \boxed{8} \boxed{5} \boxed{\text{MC}} \boxed{\text{STO}} \boxed{\times} \boxed{4} \boxed{7} \boxed{0} \boxed{\text{MC}} \boxed{\text{STO}} \boxed{\times} \boxed{4} \boxed{6} \boxed{0} \boxed{\text{MC}} \boxed{\text{STO}} \boxed{\times} \boxed{4} \boxed{4} \boxed{0} \boxed{\text{MC}} \boxed{\text{STO}} \boxed{\times} \boxed{4}$

Answer: 1,285,200,000.

Example 4: Solve  $(2 + 3) \div (5 - 2)$  using the M register.

Solution:  $\boxed{5} \boxed{-} \boxed{2} \boxed{=} \boxed{\rightarrow M} \boxed{2} \boxed{+} \boxed{3} \boxed{\div} \boxed{RM} \boxed{=}$

Answer: 1.6. Note that this solution may be quicker than using parentheses.