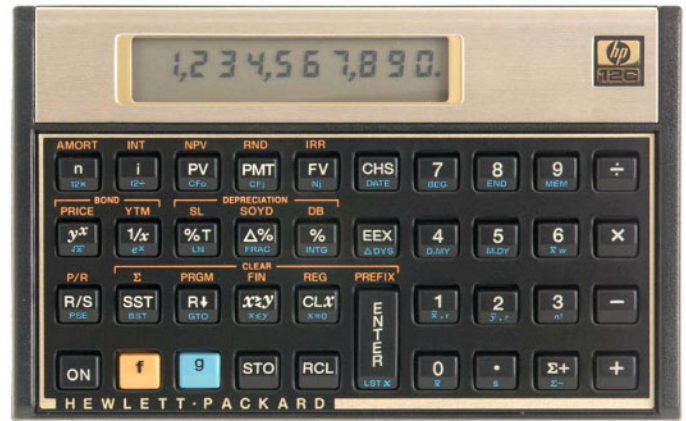




## hp calculators

### HP 12C Basic Arithmetic



Basic Arithmetic

RPN and the order of operations

Practice solving basic arithmetic problems

## Basic Arithmetic

Any basic arithmetic problem can be easily solved with the HP12C built-in arithmetic functions. Using the efficiency of its Reverse Polish Notation (RPN) logic system, daily arithmetic problems can be handled and solved quickly.

### RPN and the order of operations

Because of its RPN system, functions in the HP12C are performed as their keys are pressed. Some functions apply to one number only, others return values from two numbers. On the HP12C,  $+$ ,  $-$ ,  $\times$ ,  $\div$  and  $y^x$  apply to two already entered numbers. As a general rule, both numbers are entered in a sequence and are separated by pressing  $\text{ENTER}$  before pressing the two-numbered function. If one of the numbers is already in the display as a result from any previous operation, simply enter the second number and execute the function.

### Practice solving basic arithmetic problems

Example 1: Evaluate  $1/x$  given  $x=7.2$

Solution: The reciprocal ( $1/x$ ) is categorized as a one-number function, so all that is required is to enter the number and press the function key ( $\text{ENTER}$  is not needed):

$7 \cdot 2 \text{ } 1/x$



0.14

Figure 1

Answer: The reciprocal of 7.2 is 0.14.

Example 2: Evaluate both  $10 \times 3.5 - 4$  and  $10 \times (3.5 - 4)$  and compare the results.

Solution: The first expression can be evaluated with the following keystroke sequence:

$10 \text{ ENTER } 3.5 \times 4 -$



31.00

Figure 2

The second expression can be evaluated with the following keystroke sequence:

$3.5 \text{ ENTER } 4 - 10 \times$



-5.00

Figure 3

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Answer: The first expression evaluates to 31.00 while the second one evaluates to -5.00.

Example 3: Evaluate:  $\frac{30 - 3.5 \times 5}{2}$

Solution: The precedence of the operators implies that multiplication must be performed prior to subtracting:

$\boxed{3} \boxed{0} \boxed{\text{ENTER}} \boxed{3} \boxed{\cdot} \boxed{5} \boxed{\text{ENTER}} \boxed{5} \boxed{\times} \boxed{-} \boxed{2} \boxed{\div}$



6.25

Figure 4

Another keystroke sequence that gives the same result is:

$\boxed{3} \boxed{\cdot} \boxed{5} \boxed{\text{ENTER}} \boxed{5} \boxed{\times} \boxed{\text{CHS}} \boxed{3} \boxed{0} \boxed{+} \boxed{2} \boxed{\div}$

Example 4: Compute the numerator of  $\frac{((10 - 3.5) \times 5 - 7.2) \times 4}{2 + 4.7 \div 3}$  and then evaluate the complete expression.

Solution: The following keystroke sequence is used to find the numerator:

$\boxed{1} \boxed{0} \boxed{\text{ENTER}} \boxed{3} \boxed{\cdot} \boxed{5} \boxed{-} \boxed{5} \boxed{\times} \boxed{7} \boxed{\cdot} \boxed{2} \boxed{-} \boxed{4} \boxed{\times}$



101.20

Figure 5

The following keystroke sequence is used to resume the calculation:

$\boxed{4} \boxed{\cdot} \boxed{7} \boxed{\text{ENTER}} \boxed{3} \boxed{\div} \boxed{2} \boxed{+} \boxed{\div}$



28.37

Figure 6

Answer: The expression evaluates to 28.37 and its numerator returns 101.20.