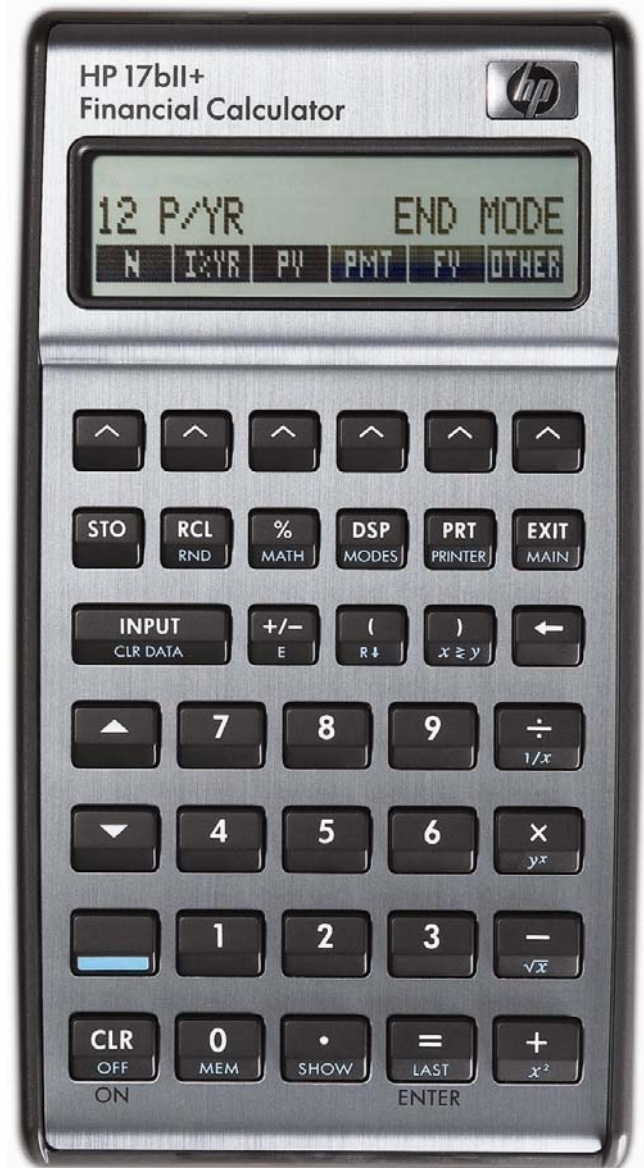# hp calculators

HP 17bII+ Percent and
Percentage Change Calculations

Percents and Percentage Changes

Practice solving Percent and
Percentage Change Problems

Percents and Percentage Changes

The HP 17bII+ easily solves problems involving percents or percentage changes.

Percent derives from a Latin phrase meaning "per 100." Many areas of our lives involve dealing with percents, from taxes to discounts to growth rates. Percent change calculations involve comparing one value to another value, computing the absolute difference between these two values and then dividing this difference by the first value, giving a percent change. The HP 17bII+ calculator solves percent problems using the ⌗ key and percentage change calculations using the %CHG sub-menu found in the BUS menu, as shown in Figure 1 below.

```
0.00
 OLD | NEW | %CH
```
Figure 1

On the HP 17bII+, the two values used in a percentage change calculation are entered by keying the first value, pressing the OLD key, then keying the second value and pressing the NEW key. The %CH function will find the percentage change.

The examples presented below will indicate common uses of these functions.

Practice solving Percent and Percentage Change Problems

Example 1:   What is the sales tax on a $50 purchase, if the sales tax rate is 5.5%?

Solution: In algebraic mode, press:

[5] [0] [×] [5] [.] [5] [%] [=]

In RPN mode, press:

[5] [0] [=] [5] [.] [5] [%]

```
2.75
 FIN | BUS | SUM | TIME|SOLVE|CURRX
```
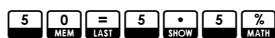Figure 2

Answer: The sales tax is $2.75. Note that in RPN mode, the ⊞ key functions as ENTER.

Example 2:   What is the total amount paid on a $50 purchase, if the sales tax rate is 5.5%?

Solution: [5] [0] [+] [5] [.] [5] [%] [=]

In RPN mode, press:

[5] [0] [=] [5] [.] [5] [%] [+]

```
52.75
 FIN | BUS | SUM | TIME|SOLVE|CURRX
```
Figure 3

Answer: The total amount paid is $52.75.

Example 3:   John's portfolio had a value of $120,000 two years ago. Today, the value is $134,515. What percentage increase has occurred in the portfolio? In other words, what is the percent change?

Solution: ⬜ [EXIT MAIN] [▓▓▓] [▓CHG]
             [1][2][0][0][0][0] [OLD]
             [1][3][4][5][1][5] [NEW]
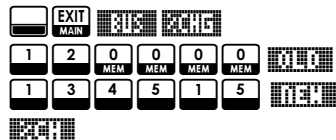   [EXIT]

```
%CHANGE=12.10
 OLD | NEW | %CH
```
Figure 4

Answer: 12.10. John's portfolio has increased by 12.10%.

Example 4:   One year later, John's portfolio had a value of $117,890. What percentage increase has occurred in the portfolio in the last year? In other words, what is the percent change?

Solution: [RCL RND] [NEW] [STO] [OLD]
             [1][1][7][8][9][0] [NEW]
             [EXIT]

```
%CHANGE=-12.36
 OLD | NEW | %CH
```
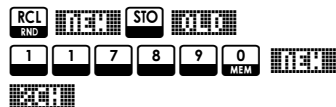Figure 5

Answer: -12.36. John's portfolio has now decreased by 12.36%. Easy come, easy go! Note the use of RCL to take the previous value for NEW and store it into the value for OLD. This is easier than keying the amount again.