Using the HP-10B calculator for financial calculations

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This is a brief guide to using the HP10B financial calculator. It does not replace your instruction booklet, nor does it replace actually practicing with the calculator. In the materials below, **BOLD FACE** indicates that you push a key with that label on your HP10B. # below indicates that you push a number key on your HP10B. Sh indicates that you push the yellow-orange or green shift key.

I use the following convention when I do work on financial calculations: I treat cash flows I am receiving as positive numbers. I treat cash flows I am paying out as negative numbers. To turn a positive number into a negative number, enter the number on your keypad and press +/-.

**General setting up of your calculator**

To set the number of digits after the decimal point, press Sh = # where # is the number of digits you want to display after the decimal point. For example, press Sh=2 to display 2 digits after the decimal.

To set cash flows to the beginning of period or the end of period, press Sh0. This toggles between “begin” mode and “end” mode.

**To calculate financial functions**

To enter the number of periods in a year, press # and Sh PMT (for example, enter 12 Sh PMT for monthly).

<table>
<thead>
<tr>
<th>Function</th>
<th>Sh</th>
<th>N</th>
<th>1/YR</th>
<th>PMT</th>
<th>PV</th>
<th>FV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Future value</td>
<td>#</td>
<td></td>
<td></td>
<td>1/YR</td>
<td>PMT and/or PV</td>
<td>FV</td>
</tr>
<tr>
<td>Present value</td>
<td>#</td>
<td></td>
<td></td>
<td>1/YR</td>
<td>PMT and/or FV</td>
<td>PV</td>
</tr>
<tr>
<td>Interest rate</td>
<td>#</td>
<td></td>
<td></td>
<td>PMT</td>
<td>PMT and/or PV</td>
<td>FV</td>
</tr>
<tr>
<td>Annuity payment</td>
<td>#</td>
<td>1/YR</td>
<td></td>
<td></td>
<td>PV or FV</td>
<td></td>
</tr>
</tbody>
</table>

To amortize a loan, do the steps for annuity payment as shown above. Then enter # INPUT # where the first # is the first period you want to amortize, and the second # is the end of the period you want to amortize (for example, to do periods 7 to 10, 7 INPUT 10. Then press Sh AMORT. To get the amount of interest you paid this period, press =. To get the amount of principal you paid this period, press = again. To get the remaining balance of the loan after this period, press = again. To do the next period, press Sh AMORT. If, at any period beginning, you want to amortize more than one period (for example, if you had a 12 months of payments on your house loan after a short first period of 5 payments), you’d press # INPUT # (in my example 6 INPUT 17). The first year would amortize 5 months of the loan, and the second year would amortize 12 months of the loan. Then follow the steps above starting with Sh AMORT.

**To calculate IRR and NPV**

For IRR and NPV, enter the cash flows, remembering the sign convention. To clear out previous data, press Sh INPUT. To enter each flow, push # CFj, remembering Flow(0) is the flow at period zero; Flow(1) is the first flow, etc. If the cash flow is repeated, enter the number of times it is repeated # Sh CFj.

If you are calculating an NPV, enter your interest rate # 1/YR followed by Sh NPV.

If you are calculating an IRR, enter Sh IRR.

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1 Remember to clear your calculator before beginning calculations by using Sh INPUT.

2 Both PMT and PV should be of the same sign.

3 Both PMT and FV should be of the same sign, and should be opposite the sign of those things entered in footnote 2 above.