

The HP 19BII Q-Card

The Display

Viewing Angle With the machine on, press and hold down the **ON** key. Then use **+** or **-** to set a better viewing angle.

Language **MAIN** **MODES** **INTL**, then choose a language.

Decimal Places Press **DISP** **FIX**, type the desired number of decimal places, and press **INPUT**. (You can use **SHOW** to temporarily view maximum precision in the current result; or **DISP** **ALL** to see it continually in every result.)

Decimal Point Press **DISP**, then choose either **.** or **,** as the decimal point character.

Clearing **←** clears the right-most digit from the calculator line.

CLEAR clears the entire calculator line.

CLEAR DATA clears the history stack and calculator line.

Arithmetic and Math

Arithmetic Mode Press **MODES** **MORE**, then select either ALGebraic or RPN mode (by pressing **ALG** or **RPN**).

Arithmetic in ALGebraic Mode To calculate $2 + 5$, you'd press **2** **+** **5** **=**. To find 40% of 200, press **2** **0** **0** **×** **4** **0** **%** **=**.


Arithmetic in RPN Mode To calculate $2 + 5$, you would press **2** **ENTER** **5** **+**. To find 40% of 200, press **2** **0** **0** **ENTER** **4** **0** **%**.

The Math Menu To do logs, trigonometry, probabilities, etc., press **MATH**, then select from among menu items **LOGS**, **TRIG**, **PROB**, etc. To change the angle mode (i.e. between degrees and radians), press **MAIN** **MODES** **D/R**. (Use **EXIT** to leave the MODES or Math menu.)

Menus and Navigation

The Main Menu Press  **MAIN**. This is the “home” menu. From here you access all other menus via these six choices:

FIN **BUS** **SUM** **TIME** **SOLVE** **TEXT**

The FIN Menu Press  **MAIN** **FIN**. This menu has sub-menus for bonds and depreciation. (**TVM**, **ICONV** and **CFLO** are covered in more detail elsewhere in this Q-Card.)

TVM **ICONV** **CFLO** **BOND** **DEPRC**


The BUS Menu Press  **MAIN** **BUS**. This has sub-menus for percentages, currency exchange and unit conversions:

%CHG **%TOTL** **MU%C** **MU%P** **CURR** **UNITS**

The SUM Menu Press  **MAIN** **SUM**. This menu computes statistics and does regression forecasting on lists of data:

CALC **INSRT** **DELET** **NAME** **GET** **MORE**

(The other three sub-menus on the main menu, **TIME**, **SOLVE** and **TEXT**, are covered in detail elsewhere in this Q-Card.)

In any menu, the **EXIT** key returns you to the menu above it;  **MAIN** sends you all the way up to the MAIN menu.

Other Keys and Settings

Setting the Beeper  **MAIN**  **MODES** **BEEP**.

(Press **BEEP** repeatedly until you get the correct setting.)

Printer Options  **MAIN**  **MODES** **PRNTR**.

Checking Available Memory  **MEM**.

The TIME Menu

Setting the Date **MAIN** **TIME SET**, type the date in the current date format (usually MM.DDYYYY) and press **DATE**.

Setting the Time **MAIN** **TIME SET**, type the time in the current time format (usually HH.MMSS) and press **TIME**.

Making Appointments **MAIN** **TIME APPT APPTI**, then type the appointment date (in the current date format—usually MM.DDYYYY) and press **DATE**. Do likewise for the desired time. To include a message, press **MSG**, type the desired message and press **INPUT**. To set it to repeat, press **RPT**, then type the interval and select **MIN**, **HR**, **DAY**, or **WEEK** (or, for no repeat, press **RPT NONE**).

Clearing Appointments To clear a single appointment, press **MAIN** **TIME APPT**, select the appointment and press **CLEAR DATA**. To clear all appointments, press **MAIN** **TIME APPT** **CLEAR DATA** **YES**.

The TEXT Menu

Creating a Text List **MAIN** **TEXT GET XNEW**, then type the text and press **INPUT**. (Long lines of text may not show completely; **EDIT** will display them.) To name the current list, press **NAME**, type the name and press **INPUT**.

Editing a Text List **MAIN** **TEXT GET** and select the desired list. Position the pointer at the entry to be modified and press **EDIT**. Use **←**, **→**, **INS**, **DEL** to modify the list.

Creating a List of Multiple-Entry Records **MAIN** **TEXT GET XNEW NAME** < LIST NAME > **INPUT**. Create and name a new list as above, typing **INPUT** after each entry of a multiple-entry record. After the last **INPUT** in the record, press **MARK**. Repeat for each record. Press **EXIT** to leave the list.

The TVM Menu

To solve for PMT, FV or PV in a uniform cash flow scenario at the TVM menu, press **MAIN** **FIN** **TVM**, then:

Calculating PMT

- Press **OTHER**, then **END** or **BEG**, for the annuity mode.
- Type the # of payments per year and press **P/YR** **EXIT**.
- Type the # years in the loan term and press **N**.
- Type the annual interest rate and press **I/YR**.
- Type the amount financed* and press **PV**.
- Type the final remaining balance* and press **FV**.
- Calculate the payment amount (PMT) by pressing **PMT**.

Calculating FV

- Press **OTHER**, then **END** or **BEG**, for the annuity mode.
- Type the # of payments per year and press **P/YR** **EXIT**.
- Type the # years in the loan term and press **N**.
- Type the annual interest rate and press **I/YR**.
- Type the amount financed* and press **PV**.
- Type the periodic payment* and press **PMT**.
- Calculate the Future Value (FV) by pressing **FV**.

Calculating PV

- Press **OTHER**, then **END** or **BEG**, for the annuity mode.
- Type the # of payments per year and press **P/YR** **EXIT**.
- Type the # years in the loan term and press **N**.
- Type the annual interest rate and press **I/YR**.
- Type the periodic payment* and press **PMT**.
- Type the final remaining balance* and press **FV**.
- Calculate the Present Value (PV) by pressing **PV**.

*The signs of the values of PV, PMT and FV must reflect the direction money is flowing—either *to* you or *from* you. (Pick one perspective—either the lender's or the borrower's—and stick with it.) For example, if PV is positive (i.e. as a borrower, you receive the loan amount), then FV and PMT are usually negative (the amounts you must repay).

The TVM Menu (cont.)

To solve for I%YR or N in a uniform cash flow scenario at the TVM menu, press **MAIN** **FIN** **TVM**, then:

Calculating I%YR

- Press **OTHER**, then **END** or **BEG**, for the annuity mode.
- Type the # of payments per year and press **P/YR** **EXIT**.
- Type the # years in the loan term and press **N**.
- Type the amount financed* and press **PV**.
- Type the periodic payment* and press **PMT**.
- Type the final remaining balance* and press **FV**.
- Find the annual interest rate (I%YR) by pressing **I%YR**.

Calculating N

- Press **OTHER**, then **END** or **BEG**, for the annuity mode.
- Type the # of payments per year and press **P/YR** **EXIT**.
- Type the annual interest rate and press **I%YR**.
- Type the amount financed* and press **PV**.
- Type the periodic payment* and press **PMT**.
- Type the final remaining balance* and press **FV**.
- Find the # of payment periods (N) by pressing **N**.

*(See the note at the bottom of page 4.)

Amortization (AMRT)

To amortize a loan, go to the TVM menu, store the usual parameters and all known values, then solve for PMT. Next, go to the AMRT menu (press **OTHER** **AMRT**), type the number of payments to be amortized at one time and press **#P**.

You'll see: **PAYMENTS: 1-xx**
BALANCE=xxx
INTEREST=xxx

- Press **PRIN** to find the principal paid during that period.
- Press **NEXT** to amortize the next set of payments; etc.

The ICONV Menu

When an interest rate compounds either more or less frequently than the period of the payments in a TVM payment stream, you can use ICONV to find an equivalent rate whose periodicity does match the payments. Press **MAIN** **FIN** **ICONV** **PER**, then follow these steps:

Type the quoted rate; press **NOM%**.

Type that rate's compounding periods/ year; press **P**.

Press **EFF%**.

Type the P/YR of the TVM payment stream; press **P**.

Press **NOM%** to find the equivalent I%YR to use in TVM.

The SOLVE Menu

Creating Formulas Go to the SOLVE menu: **MAIN** **SOLVE**.

Next, key the formula. (For example, **DIST=END**
BEGIN gives **DIST=END-BEGIN**.)

Then press **CALC** to verify the formula's validity and prepare it for use. (Press **EXIT** **EXIT** to leave SOLVE.)

Using SOLVE Formulas At the SOLVE menu (press **MAIN** **SOLVE** if you're not already there), use **↑** and **↓** to point to the desired formula, and press **CALC**. Then just store the known values and solve for the unknown. (Keep in mind that the machine solves most formulas iteratively, so results may take a little time.)

Editing Formulas At the SOLVE menu (press **MAIN** **SOLVE** if you're not already there), use **↑** and **↓** to point to the desired formula, and press **EDIT**. Then type the modifications, using **←**, **→**, **INS** and **DEL** as necessary. When you finish, press **CALC** to re-store and to verify the validity of the modified formula. (Press **EXIT** **EXIT** to leave SOLVE.)

The CFLO Menu

Creating a CFLO List A cash flow list is a description of the amounts and directions (income is plus; outlay is minus) of the cash flows in an investment scenario. The flow amounts may differ, but they must be strictly periodic in occurrence. The description consists of an initial cash flow and then one or more *groups* of identical consecutive cash flows.

Go to the CFLO menu: **MAIN** **FIN** **CFLO**.

Start a new list by pressing **GET** **NEW**. (If there is another unnamed list present, just clear it as prompted.)

Key in the initial cash flow and press **INPUT**.

Key in the cash flow amount in Group 1 and press **INPUT**.

Key in the # of consecutive occurrences of the cash flow amount in Group 1 and press **INPUT**.

Key in the cash flow amount in Group 2 and press **INPUT**.

Key in the # of consecutive occurrences of the cash flow amount in Group 2 and press **INPUT**.

...And so on—for all such groups in the scenario. Then name the list to save it. **NAME** (type a name) **INPUT**.

NPV and IRR%




Calculating NPV At the CFLO menu (**MAIN** **FIN** **CFLO**), use **GET** to select a desired CFLO list and press **CALC**. Then key in the *periodic* (not necessarily annual) discount rate (often $I\%YR \div P/YR$) and press **I%**. Then solve for **NPV**. (The same procedure goes for **NFV**.)

Calculating IRR% At the CFLO menu (**MAIN** **FIN** **CFLO**), use **GET** to select a desired CFLO list and press **CALC**. Press **IRR%**. (Keep in mind that this is an iterative calculation that sometimes has no solution or multiple solutions.) To annualize the result, you need to multiply it by the number of periods per year.

Errors and Troubleshooting

Common Errors

NO SOLUTION during TVM: Check the signs of PV, PMT, FV. Be sure PMT is enough to reduce the balance.
INVALID DATE: The date format is probably wrong.
INVALID EQUATION in SOLVE: The formula you just entered has incorrect syntax. Check especially for missing parentheses and $\frac{\square}{\square}$ delimiters.

Testing Machine Operation First, press . Then, while pressing and holding down , press the 5th menu key from the left. The machine beeps a lot; the display goes wild. In a healthy machine, you'll then see **OK-19B II**. (If you get a fail message, it needs service.) To end the continuously cycling test, press and hold , and press the 3rd menu key from the left. **MACHINE RESET** should appear.

Contacting Hewlett-Packard Visit HP's calculator web site at <http://www.hp.com/calculators>. Or call 1-970-392-1001.

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