

Extending aplets

As discussed in “Aplets” on page 1-18 in the Getting Started chapter, aplets are the application environments where you explore different classes of mathematical operations.

You can extend the capability of the HP 39G/40G in the following ways:

- Create new aplets, based on existing aplets, with specific configurations such as: angle measure, graphical or tabular settings, and annotations via notes and sketches.
- Transmit aplets between HP 39G calculators via an infra red link.
- Download e-lessons (teaching aplets) from the Hewlett Packard’s Calculator web site.
- Program new aplets. See Chapter 15 Programming for further details.

Creating new aplets based on existing aplets

You can create a new aplet based on an existing aplet. To create a new aplet, save an existing aplet under a new name, then modify the aplet to add the configurations and the functionality that you want. You can send your aplet to other calculators so that other people can use it.

Information to define an aplet is saved automatically as it is entered into the calculator.

To keep as much memory available for storage as possible, delete any aplets you no longer need.

Aplet Keys

Key	Meaning
SAVE	Saves the highlighted aplet with a name.
RESET	Resets the default values and settings in the highlighted aplet. This erases any stored data or functions.
SORT	Rearranges the items in the Aplet Library menu list.
SEND	Transmits the highlighted aplet to another HP 39G or a storage device.
RECV (receive)	Receives the aplet sent from another HP 39G or storage device.
START (or ENTER)	Opens the selected aplet.

Example: To create new aplet from existing Solve aplet

A simple example of a customized aplet is the TRIANGLES aplet. This aplet is a copy of the Solve aplet containing the formulae commonly used in calculations involving right triangles.

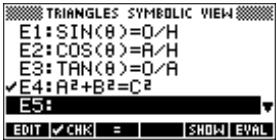
1. In APLET, highlight Solve and SAVE it under the new name.

APLET select Solve
SAVE ALPHA
T R I A N G L E S
ENTER
START



2. Enter the four formulae:

SIN ALPHA θ
) = ALPHA O
/ ALPHA H ENTER
COS ALPHA θ) =
ALPHA A /
ALPHA H ENTER
TAN ALPHA θ) =
ALPHA O / ALPHA A ENTER
ALPHA A X^2 + ALPHA B X^2
= ALPHA C X^2 ENTER



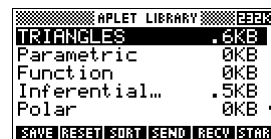
3. Decide whether you want the aplet to operate in Degrees or Radians.

SHIFT **MODES**
CHOOS
Select Degrees
OK



4. Ensure the TRIANGLES aplet is saved in the Aplet Library.

APLET
 The Solve aplet can now
 be reset and used for other
 problems.



Example: To use the customized aplet

To use the aplet, simply select the appropriate formula,
 change to the Numeric view and solve for the missing
 variable.

Find the length of a ladder leaning against a vertical wall,
 which extends 5 metres up a wall, and which forms an angle
 of 35° with the horizontal.

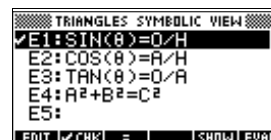
1. Select the aplet

APLET select
 TRIANGLES
START



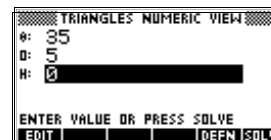
2. Choose the sine formula
in E1.

▲ **▲** **▲** **▲** **▲**
CHK



3. Change to the Numeric
view and enter the
known values

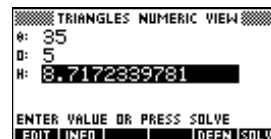
NUM 35 **ENTER**
 5 **ENTER**



4. Solve for the missing
value

SOLVE

ie. The length of the
 ladder is 8.72 metres



Resetting an applet

Resetting an applet clears all data and resets all default settings.

- To reset an applet, open the Library, select the applet and press **RESET**.

You can only reset an applet that is based on a built-in applet if the programmer who created it has provided a Reset option.

Annotating an applet with notes

The Note view (**[SHIFT]NOTE**) attaches a note to the current applet. See Chapter 8, “Notes and Sketches.”

Annotating an applet with sketches

The Sketch view (**[SHIFT]SKETCH**) attaches a picture to the current applet. See chapter 8, “Notes and Sketches.”



Notes and sketches that you attach to an applet become part of the applet. When you transfer the applet to another calculator, the associated note and sketch are transferred as well.

Downloading e-lessons from the web

In addition to the standard applets that come with the calculator, you can download applets from the world wide web. For example, Hewlett Packard’s Calculators web site contains applets that demonstrate certain mathematical concepts. Note that you need the Graphing Calculator Connectivity Kit in order to load applets from a PC.

Hewlett Packard’s Calculators web site can be found at:

www.hp.com/calculators


Sending and receiving applets

A convenient way to distribute or share problems in class and to turn in homework is to transmit (copy) applets directly from one HP 39G to another. This takes place via the infrared port.

You can also send (copy) and receive applets to/from a remote storage device (applet disk drive or computer). This takes place via a cable connection and requires an applet disk drive or

specialized software running on a PC or Mac (such as the PC Connectivity Kit).

To transmit an applet

1. Connect the storage device to the calculator by cable
or
align the two calculators' infrared ports by matching up the triangle marks on the rims of the calculators. Place the calculators no more than 2 inches (5 cm) apart.
 2. Sending calculator: Open the Library, highlight the applet to send, and press **SEND**.
 - You have two options: another HP 39G or a disk drive on a PC. Highlight your selection and press **OK**.
 - If transmitting to a disk drive, you have the options of sending to the current (default) directory or to another directory.
 3. Receiving calculator: Open the applet library and press **RECV**.
 - You have two options: another HP 39G or a disk drive (or computer). Highlight your selection and press **OK**.
-  The Transmit annunciator displays until transmission is complete.

If you are using the PC Connectivity Kit to download applets from a PC, you will see a list of applets in the PC's current directory. Check as many items as you would like to receive.

Sorting items in the applet library menu list

Once you have entered information into an applet, you have defined a new version of an applet. The information is automatically saved under the current applet name, such as "Function." To create additional applets of the same type, you must give the current applet a new name.

The advantage of storing an applet is to allow you to keep a copy of a working environment for later use.

The applet library is where you go to manage your applets. Press **APLET**. Highlight (using the arrow keys) the name of the applet you want to act on.

The current applet is highlighted.

To sort the aplet list

In the aplet library, press **SORT**. Select the sorting scheme and press **ENTER**.

- Chronologically produces a chronological order by most recent use of the aplets. (The last-used aplet appears first, and so on.)
- Alphabetically produces an alphabetical order by aplet name.

To delete an aplet

You cannot delete a built-in aplet. You can only clear its data and reset its default settings.

To delete a customized aplet, open the aplet library, highlight the aplet to be deleted, and press **DEL**. To delete all custom aplets, press **SHIFT CLEAR**.