Bonus Chapter 1

Using Cabri Jr.

In This Chapter

- Starting and quitting Cabri Jr.
- Creating, saving, recalling, and deleting files
- Using menus and dialog boxes
- Clearing the screen

If you've ever used a dynamic geometry computer software package such as The Geometer's Sketchpad or Cabri Geometry II Plus, then you appreciate its ability to not only accurately construct geometric figures, but to also perform translations, rotations, dilations, and reflections. These software packages can even find lengths, area, angle measures, create tessellations, and much, much more. If you haven't used such software packages, wouldn't you like to?

Because the TI-84 comes equipped with two geometry applications, Cabri Jr. and GeoMaster, you can now do your geometric investigations on the calculator. Granted, the calculator screen is rather small for some investigations, but other than that, these two calculator applications do almost everything that the computer software packages do.

In this and the following three chapters, I explain how to use the Cabri Jr. application. To help you decide which application is best for you, consider the following differences between Cabri Jr. (version 1.02) and GeoMaster (version 1.10).

Some Cabri Jr. features not found in GeoMaster are

- Cabri Jr. has an Undo tool; GeoMaster does not. However, they both allow you to delete a selected construction.
- Cabri Jr. allows you to display constructions as dotted or solid lines; GeoMaster uses only solid lines.

- Cabri Jr. has an Animate tool and a Locus tool; GeoMaster does not. Such tools allow you to show, for example, how the definition of a conic section is used to construct the conic section.
- The Cabri Jr.'s Calculate tool can add, subtract, multiply, divide, and find square roots. GeoMaster's Calculate tool can only add and subtract.
- When you quit Cabri Jr. without saving your work, the next time you start the application, your work appears as you left it. When you quit GeoMaster, your unsaved work vanishes.
- Cabri Jr. can talk to (share files with) the Cabri Geometry II Plus computer software and to the Cabri Jr. applications found on the TI-89, TI-92 Plus, and Voyage 200. GeoMaster is not on speaking terms with anything.

Some GeoMaster features not found in Cabri Jr. are

- GeoMaster has a tool for constructing any type of polygon, but Cabri Jr. has tools for constructing only triangles and quadrilaterals. In both applications, you can, of course, construct a polygon by stringing together consecutive line segments.
- GeoMaster has a tool for constructing regular polygons; Cabri Jr. does not.
- GeoMaster has three tools not found in Cabri Jr. that answer the questions: Are two lines parallel? Are two lines perpendicular? Are three points collinear?
- As you move the cursor in GeoMaster, the coordinates of its location are displayed at the bottom of the screen. This feature is not available in Cabri Jr., although Cabri Jr. tells you the coordinates of a point after it is constructed. GeoMaster also allows you to adjust the size of the viewing window the same way you do when graphing functions, which is explained in Chapter 9.
- GeoMaster allows you to move one or more objects at the same time; Cabri Jr. allows you to move only one object at a time.
- GeoMaster can construct and add vectors; Cabri Jr. cannot.
- GeoMaster can construct arcs of a circle; Cabri Jr. cannot.
- GeoMaster has a tool that stores measured data (lengths, areas, and angle measures) in a list; Cabri Jr. does not. After the data is in a list, it can be accessed from the home screen, where you can perform more calculations on these measures than you can with Cabri Jr.

When you start the geometry application of your choice, you see the version number on the screen, as illustrated in the first two pictures in Figure B1-1. If the version number is larger than 1.03 for Cabri Jr. or 1.10 for GeoMaster, the versions in existence at the time this book was written, then the differences listed earlier in this chapter may no longer exist. If the version number is not larger, check out Texas Instruments' Web site to see if there is a more recent version for you to download. Chapter 21 tells you how to do this.

Figure B1-1: The TI-84 geometry applications.

Starting and Quitting Cabri Jr.

To start Cabri Jr., press [APPS], use [▼] to move the cursor to the Cabri Jr. application, and press [ENTER]. You are confronted with the first picture in Figure B1-1. As instructed on the screen, press any key to enter Cabri Jr.

If Cabri Jr. is one of the first ten applications in your **APPS** menu, you can start the application be pressing [APPS] and keying in the number to the left of Cabri Jr. in the **APPS** menu. For example, Cabri Jr. is the ninth application in my **APPS** menu. So to start this application, I press [APPS], wait for the **APPS** menu to appear before I press [9], and when the Cabri Jr. logo screen appears I press [ENTER].

After starting Cabri Jr., the **F1** menu (or your work from the last time you used this application) appears on the screen. The **F1** menu appears only when the calculator has never before used Cabri Jr., or when you started a new file the last time you used the calculator but exited the application before creating that new file. If you see the **F1** menu, press [▼][ENTER] to start a new file. I don't recommend investigating the **Help** submenu. Like most Help menus, it's not much help.

After a few moments of inactivity, Cabri Jr. displays a help screen, as illustrated in the third picture in Figure B1-1. Press [ENTER] to get rid of the help screen so that you can continue with your work.

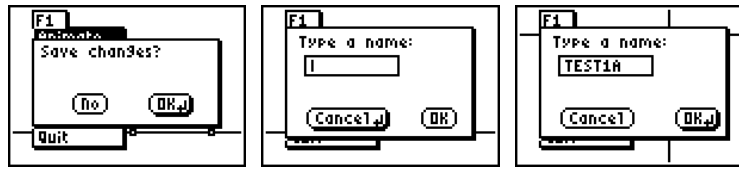
To quit Cabri Jr., press 2nd MODE or select **Quit** from the **F1** menu by pressing Y= 8. The next time you start Cabri Jr., your work will appear on the screen as you left it.

When the calculator remains idle for about five minutes, it shuts itself off in order to extend the life of its batteries. If this happens while you are using the Cabri Jr. application, it also quits this application. So when you turn the calculator back on, you will have to go to the **APPS** menu to restart Cabri Jr. But don't worry, after restarting Cabri Jr., your work will appear on the screen as it was before the calculator powered down.

Creating a New File

Some people like to just clear the screen of their old work and then start creating their new geometric constructions. If you're that sort, I explain how to clear the screen later in this chapter. But even if you are that sort, I recommend that you start fresh by creating a new file. The number of keystrokes for each procedure is the same, but when you create a new file, you are reminded to save your work.

To create a new file, press Y= 4 to select **New** from the **F1** menu. You see either a blank screen or the first dialog box in Figure B1-2. (The screen is blank if there was no previous work on the screen for the calculator to save or if you saved your previous work and then selected **New** from the **F1** menu.)



Creating a new file Saving a file Entering a filename

Figure B1-2: Creating and saving files.

If you want to save your previous work, press ENTER and then follow Step 2 in the next section about saving files.

If you don't want to save your previous work, press 2nd to activate the **No** button in this dialog box and then press ENTER to select that option. A blank screen appears for the creation of your new geometric figures.

Using Cabri Jr. dialog boxes

Many dialog boxes, such as those in Figure B1-2, have two option buttons at the bottom of the box. One of these buttons contains the ↵ symbol to the right of the button; the other does not. To select the option having the ↵ symbol, press [ENTER]. To select the other option, press [2nd][ENTER]. For example, if you wish to cancel saving the file in the third dialog box in Figure B1-2, press [2nd][ENTER].

Saving a File

After creating geometric figures, you can save your work to a file using either the **F1** menu's **Save** or **Save as** command. Here's what these commands do:

- **Save:** As the command says, it saves your work. But it really does more than that. After your work is saved, it does not vanish from the screen. So you can continue working on it. Then next time you select **Save** from the **F1** menu, the continuation of your work is automatically saved under the same filename. This is really convenient when creating a complicated geometric construction. After you have created part of the construction the way you want it, save it. Then move on to the next part. If you botch that part, you can always trash it by opening the saved construction. (How to open files is explained later in this chapter.) If things go well, save the extra work you've done and continue on to the next part of the construction.
- **Save as:** This command allows you to save an already existing file under another filename. This is really convenient when there is a basic construction that you want to use as a starting point for several other investigations. Just save the basic construction under one filename using the **Save** command. Then open that file, complete your other investigation, and use the **Save as** command to save the enhanced construction under different filename.

To save a file, follow these steps:

1. **Press [Y=] to access the F1 menu. Repeatedly use [▼] to highlight either Save or Save as. Then press [ENTER] to select that command.**

If your current file has never been saved before, you see the second dialog box in Figure B1-2. Proceed to the next step.

If you select the **Save** command and your file has been saved before, the calculator automatically resaves your updated file under the same filename without displaying any dialog box. You can now continue with the same construction or create a new file, as explained in the previous section.

If you select the **Save as** command and your file has been saved before, you see the third dialog box in Figure B1-2 with the current filename displayed. If you want to save the file under a new filename, press CLEAR to erase the filename in the dialog box and proceed to the next step. If you want to resave the file under the filename in the dialog box, press ENTER. When you are warned that the existing file will be overwritten by the new file, press ENTER again to let the calculator know that this is exactly what you want to do. You can now continue with the same construction or create a new file, as explained in the previous section.

2. **Enter a filename and then press ENTER.**

   Alpha-lock is on so that you can start writing letters. Your filename can contain no more than eight letters and numbers and must begin with a letter. Writing words and using the Alpha key is explained in Chapter 1.

   If you make a mistake while entering the filename, you can press the DEL to delete the letter to the left of the cursor or you can press CLEAR and start over. After entering a filename and pressing ENTER, your file is saved and you can continue with the same construction or create a new file, as explained in the previous section.

If you try to save a file using the same filename as a previously saved file, a warning appears on the screen telling you that you are about to overwrite an existing file. If you don't want to do this, press 2nd ENTER to select the **No** option. If you do want to overwrite the file, just press ENTER.

Opening and Deleting Files

To open a Cabri Jr. file previously saved in memory, press Y= 5 to select **Open** from the **F1** menu. Repeatedly press ▼ to highlight the file you want to open and then press ENTER to open it. If the previous work on the screen was not saved, the calculator gives you the option of saving it before opening the requested file. If you wish to save this work, the previous section tells you how.

If you select **Open** from the **F1** menu and then change your mind about opening an existing file, press [CLEAR] to get out of the dialog box without selecting a file.

To delete a Cabri Jr. file from the memory of the calculator, follow these steps:

1. **Press [2nd][+][2] to enter the Memory manager.**
2. **Repeatedly press [▼] until the cursor is to the left of AppVars and press [ENTER].**

   AppVars can also be selected by simply pressing [ALPHA][x^{-1}].
3. **Repeatedly press [▼] until the cursor is to the left of the file you want to delete and press [DEL].**
4. **Press [2] if you really want to delete the file; press [1] if you chicken out about deleting the file from memory.**

Using Menus

Cabri Jr. has five menus that are accessed by pressing the Graphing keys ([Y=], [WINDOW], [ZOOM], [TRACE], and [GRAPH]) that appear on the calculator right below the screen. Here's an overview of what's available in these menus:

- **F1: File.** (Press [Y=] to access this menu.)

  This is the menu you use when you want to create, save, or recall files or when you want to exit the Cabri Jr. application. How to create, save, and recall files is explained earlier in this chapter; how to exit the application is explained in the "Starting and Quitting Cabri Jr." section at the beginning of this chapter.
- **F2: Creation.** (Press [WINDOW] to access this menu.)

  This menu contains the commands that allow you to create points, lines, segments, circles, triangles, and quadrilaterals. Using these commands is explained in the next chapter.
- **F3: Construction.** (Press [ZOOM] to access this menu.)

  This menu contains the commands that allow you to construct perpendicular and parallel lines, angle bisectors, and midpoints. Using these commands is explained in the next chapter.
- **F4: Transform.** (Press [TRACE] to access this menu.)

  This menu contains the commands that allow you to transform objects by translating, reflecting, rotating, and/or dilating them. How to use these commands is explained in Chapter 8.

- **F5: Appearance.** (Press GRAPH to access this menu.)

  As the title of the menu says, this is the menu that houses the commands that let you hide objects, display objects as dashed or solid lines, or label your objects. These commands are explained in Chapter 6. But what's not conveyed by the title are the many other useful commands the menu contains, such as the commands for finding length, area, and angle measure. These commands are explained in Chapter 7.

If you are cruising through a Cabri Jr. menu and decide not to make a selection, press CLEAR to get out of the menu and back to the Cabri Jr. screen. If you are in a submenu, press CLEAR twice; once to get back to the main menu, and again to get back to the screen.

To select a menu item, first press the key that accesses the desired menu. Those keys are listed previously in the descriptions of the contents of the menus. The last command used in this menu is highlighted and a symbol representing this command appears in the upper left of the screen. The first picture in Figure B1-3 illustrates this where **Point** was the last command selected from the **F2** menu.

The right arrow next to a menu item, as in the first picture in Figure B1-3, indicates that the item has a submenu. To display that submenu, highlight the menu item and press ▶. This is illustrated in the second picture in Figure B1-3 where you see the submenu for the **Point** Command. Pressing ◀ takes you back to the main menu.

If necessary, repeatedly press ▼ to highlight the command you wish to use, and then press ENTER to select that command. The upper-left corner of the screen contains a pictorial reminder of what command is active. This is illustrated in the third picture of Figure B1-3 for the **Intersection** command.

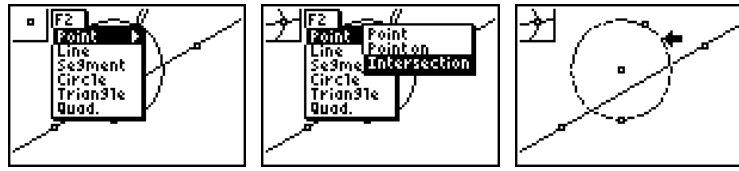


Figure B1-3: Selecting a menu item.

Clearing the Screen

To erase all objects on the screen, press GRAPH and repeatedly press ▼ to highlight **Clear**. Then press ▶ to open the **Clear** submenu; if necessary, press ▼ to highlight **All**, and then press ENTER. You see a clean screen. If you regret having cleared the screen, press Y= 2 to make your work reappear.

The quick and dirty way to clear the screen is to press CLEAR *three* times and then press ENTER when asked if you really want to do this, or press 2nd ENTER if you change your mind. If you clear the screen in this fashion, you can still get your work back by pressing Y= 2 to select **Undo** from the **F1** menu.