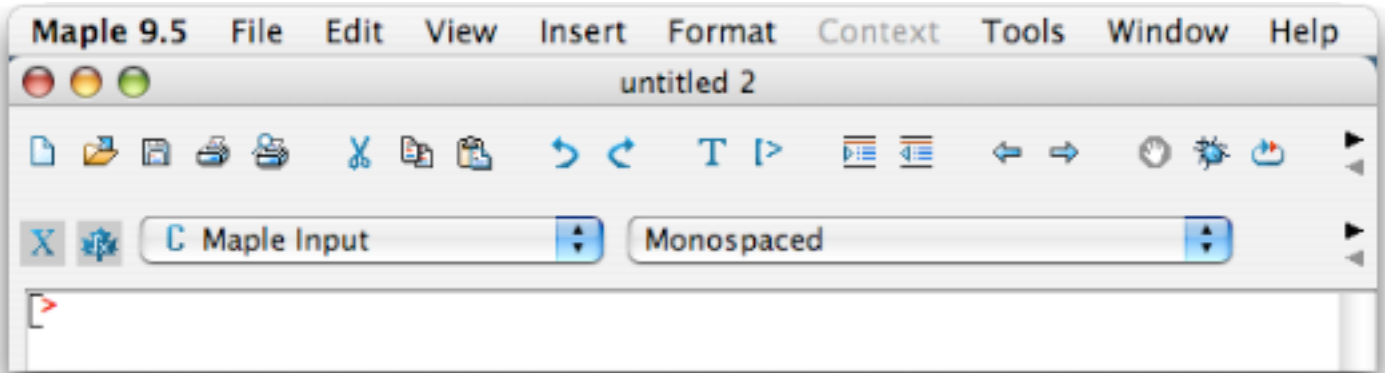


Part I. The Maple Worksheet

Section 1. Execution groups: Input/Output

When Maple is started up it launches to an empty window with a red input prompt, `>`, appearing at the top. This document is referred to as a Maple worksheet. The row of icons running across the top of the window is called the tool bar. The second row, consisting of icons and drop down menus, is called the context bar.



Look carefully and you will see that the input prompt appearing in the picture is enclosed in a left bracket (as are all the paragraphs in the document you are reading at this moment...this is a Maple worksheet). The bracket marks the boundaries of what Maple refers to as an Execution Group, one of the two fundamental building blocks of a Maple worksheet. The other building block is a Text Group, that is where your eyes are right now, in a Text Group.

Execution Groups contain input and processed output. The user makes a mathematical entry at the input prompt by clicking just to the right of the prompt and typing. Terminating the entry with a semicolon and pressing the [return] key (the [Enter] key on a PC) is the signal to Maple to process the entry and place the result centered directly below the input. Whatever Maple produces is called the output. As soon as the output appears (in blue) a new Execution Group is generated containing another input prompt. The entries below show the appearance of the worksheet immediately after Maple has processed the entry $1 + 2$.

```
> 1+2;
```

3

When you do this you will see that the original Execution Group has expanded to include both the input, $1+2$, and the output, 3, as shown above.

Input comments: Use a hash mark #

A short comment can be placed following any input by typing a hash mark # (shift-3), Maple ignores anything typed at an input prompt following a hash mark. This is illustrated below. The first Execution Group is the same as the one appearing above, but with a comment. The second one displays the input and output for the computation of an antiderivative for the trigonometric expression $\frac{\tan(x)}{\sin(x)^4}$.

- The Maple syntax for indefinite integration of $f(x)$ with respect to the x variable is **int(f(x) , x)**.

```
> 1+2; # A simple sum
```

3

```
> int(tan(x)/sin(x)^4,x); # An integral, not so simple
```

$$-\frac{1}{2 \sin(x)^2} + \ln(\tan(x))$$

So, as a worksheet is created input and output is grouped together in Execution Groups and text entries, like this one, are enclosed in their own left brackets. A text entry is formally referred to as a Text Group. The left brackets are very useful during the creation of a worksheet, allowing the user to move confidently between blocks of text and blocks of mathematics. However, the brackets are a distraction for the reader of a completed worksheet and detract from the appearance of the worksheet when it is printed. Consequently, the left brackets are hidden from view in the other worksheets that make up this manual (see, for example, the Introduction). This is accomplished by pulling down the **View** menu, selecting **Hide/Show Contents...** and then deselecting **Ranges/Execution Groups** in the ensuing dialogue. The brackets can be shown at any time by using the same dialogue.

The pull down menus

There is a grand total of ten pull down Maple menus at the top of the screen when Maple is the active application on a Macintosh. They are labeled, in order from left to right, as follows:

Maple 9.5 File Edit View Insert Format Context Tools Window Help.

There are only eight menus on the PC version of Maple 9.5, there is no Maple 9.5 menu nor is there a Context menu.

A brief description of some of the items on the menus is given below.

Maple 9.5

The first menu choice is **Preferences...**. The ensuing dialogue allows the user to adjust the settings for various Maple tasks. For example, the **Auto Save** feature can be turned on and off or set to a different frequency. To quit Maple choose **Quit Maple 9.5** at the bottom of this menu (or press **Command-Q**, the Command key is the one next to the space bar...on both sides). On a PC the **Preferences...** dialogue is accessed by choosing **Options...** on the **Tools** menu. Exit Maple on a PC by clicking on the x button in the upper right corner of the worksheet window.

File

Use this menu to open, close, save, and print files. Note that the keyboard equivalent for **Save** is **Command-S** (hold down the Command key...next to the space bar...and press S...no shift). On a PC do a **Save** by pressing **Control-S**. Use it early and use it often. The item called **Print Preview...** is also important. Use it before sending any job to the printer to see how the worksheet will look on paper. The **Export As...** item can be used to export the worksheet in HTML format.

View

Use this menu to control the appearance of the worksheet window. For example the tool bar or the context bar can be hidden from view and the user can show palettes for point and click input entry. **Zoom Factor** controls the magnification for screen display and we have already mentioned **Hide/Show Contents...**.

Insert

Items on this menu can be used to insert various elements into the worksheet including new Execution Groups and blocks of text. See the next section.

Format

This menu contains items that control the character and paragraph styles in a block of text. Paragraph styles can be changed and new styles can be defined.

Context

This menu changes according to the position of the cursor in the worksheet. It is almost always used to apply procedures to Maple output. Click on the output and pull down the Context menu. On a PC, a contextual menu can be accessed as a pop-up menu by right-clicking on the output. On a Macintosh, a Control-click (or a right click if you have a two-button mouse) on the output will also pop-up a contextual menu.

Tools

Maple 9.5 has a spell checker, and here it is. Use it.

Window

Menu items here control the positioning of multiple worksheet windows.

Help

This menu provides access to the extensive help facilities available in Maple, including a mathematics dictionary. One of the items is called **New Users**. Select it to see a list of selections for new users to help them get started in Maple. The item called **Help on "context"** is usually grayed out. However, if a word or phrase in the worksheet has been selected it becomes active and choosing it tells Maple to search its Help files for information about the selection and display it in the Help Browser. The corresponding item on the PC Help menu says **Help on "selected word or phrase"**.