Mathematics 304 – Ordinary Differential Equations
Getting (Re-)acquainted With Sun/Unix, Maple
September 2, 2000

Some general information about the Unix operating system is available from a link on the course homepage.

Running Maple in SW 219

To run Maple on the Sun workstation network:

1) Log onto any machine using the username/password (Note: this is *not* your campus network username/password). The Sun workstation network is connected to, but separate from, the rest of the campus network.
2) Open a *Terminal* window using the Workspace Menu (to get this place the cursor over the desktop background and press the *right* mouse button),
3) Type in `xmaple &` at the command prompt (the symbols at the start of the current input line – computer name, followed by the % sign) in the Terminal window.

The "subwindow" marked Untitled (1) opened inside it is a blank *Maple worksheet*.

Maple Worksheets

Worksheets are integrated text/graphics/mathematics documents where any or all of the following can be done:

a) you can type in commands from the keyboard to ask Maple to perform many different kinds of calculations, read data from external files, store work in files, etc.
b) output generated by Maple from your input commands (numerical values, symbolic formulas, and graphics) will be displayed,
c) you can modify commands, generating new output, store your results for use later, etc.
d) you can enter text to annotate and explain the results of computations.

Input and Text Regions in a Worksheet

A new worksheet window will be labeled something like Untitled (1). On the first line of the worksheet, there is a [> in black. This is the Maple *input prompt* – the signal that Maple is ready to accept a command from you and try to execute it. A new input prompt will be generated automatically in a worksheet each time you enter a command and execute it *at the end of a worksheet in progress*. You can *insert an input prompt* and an input region at any point in the worksheet by placing the cursor at the desired location and pressing the toolbar button marked with [>.

To create a text region you can press the [> button above, then the button marked by a capital T (this changes the region into a text region). Any text can now be entered, and

this will be treated as an "inert" comment. That is, it will appear as you enter it when you print out the worksheet, and it will not be treated as Maple input. After you create a text region, if you press the capital sigma (Σ) toolbar button with the cursor placed on that region, you can type in a Maple expression in input format, and have it displayed (in "inert" form) in usual mathematical notation (with raised exponents, no asterisks for multiplication, etc. This is sometimes useful for creating "pretty" worksheets!

Saving and Reloading your Maple Worksheets

To save a worksheet:

1) Select the SAVE option from the FILE pull-down menu, or press the tool bar button that looks like a 3 1/2 "floppy" diskette.
2) If you are saving your work for the first time, you will see a SAVE AS dialog box. Go to the Filename box, and type in a name for the file where the worksheet will be stored (any string of letters and digits – no spaces – is OK) type in a period after the file name you chose and then the "extension" *mws* OK button to write the worksheet to the network drive. To save the worksheet in a new file (for instance with a different name), use the SAVE AS option.)
3) On the Sun workstation network, worksheets are saved to your space on a shared network hard disk drive. You can access these again from any one of the workstations in SW 219, or any of the Sun workstations in the Math/CS department. *But note: This storage is separate from your p: drive on the campus network, and you will not be able to read files from your p: drive in SW 219.*
4) To update the worksheet further in a later session, you can read the worksheet back into Maple using the OPEN option from the FILE Menu, or the "open" toolbar button. IMPORTANT NOTE: When you read a previously created worksheet into a new Maple session, you *have not actually executed any of the commands in it in the new session.* If you want to make use of any results in that worksheet, you will need to execute the commands again. In the EDIT pull-down menu, you will see an EXECUTE option that lets you recompute an entire worksheet or a section of one. RETURN on selected input lines to do the same thing.

Printing

To print a file in SW 219, use the printer toolbar icon. In the Printer Setup form, the settings will need one adjustment – make sure the Print Command button is depressed. After you press Print, the output will be routed to the network printer in SW219 for you to pick up.

Getting Out

When you leave, quit the Maple window (FILE/EXIT). Then log out from the Sun network (either the Log Out option from the Workspace menu, or the EXIT button on the Workspace toolbar). DO NOT TURN THE WORKSTATION OFF. THESE ARE LEFT POWERED UP AT ALL TIMES.