

Further Notes

1. It is wise to begin each project with a comment line describing what the project is about, and the command **“restart”**. The reason for the comment is to make it clear to (you and) the reader what you are doing. The reason for the **“restart”** is that if, as a consequence of editing, you become unsure about how Maple has remembered what you entered (item 11 in *Some Common Maple Errors*), you can move the cursor back to the beginning of your session, and re-**Enter** all the commands in the order in which they have been listed; since the effect of **“restart”** is to clear Maples memory, this will give you an accurate picture of what your commands do.
2. The digits in the decimal representation of a real number are either significant digits or placeholder digits. The digits 1, 2, 3, 4, 5, 6, 7, 8, 9 are always significant digits. The digit 0 can either be a significant digit or a placeholder digit: it is a placeholder digit if its only role is to fix the position of the decimal point. For example, the 0s in 0.0012 and 1200 are placeholder digits (in the later case as long as only the 1 and 2 are accurate), while the last 0 in 0.00120 and the 0s in 1200.3 are significant. To avoid possible ambiguities, real numbers are often written in scientific notation. Using that notation, $1.2 * 10^4$ has 2 significant digits and $1.20 * 10^4$ has 3 significant digits.
3. While the unit of length on the horizontal axis of a Cartesian coordinate system is often the same as the unit of length on the vertical axis, this need not always be the case. Indeed, in many situations it is useful to use different units of length on the coordinate axes to make a graph look “better”. The ratio of the unit of length on the vertical axis of a coordinate system to the unit of length on the horizontal axis is known as the *aspect ratio* of the coordinate system. Thus a coordinate system whose aspect ratio is 1 has the same unit of length on the horizontal and vertical axes, and a coordinate system whose aspect ratio is 2 has a unit of length on the vertical axes that is twice that of a unit on the horizontal axis. To force Maple to use an aspect ratio of 1, the option **“scaling=constrained”** may be used. To allow Maple to use an aspect ratio other than 1 (to allow Maple to automatically resize graphics), the option **“scaling=unconstrained”** may be used.
4. To resize a 2-dimensional graphic in Maple, click the graphic once; a box surrounding the graphic will appear. Then, using the mouse, drag either one of the lower corners of the surrounding box or the lower edge of the surrounding box (the “handles”) into the appropriate position.
5. Throughout these projects you will encounter situations in which you can save a great deal of time and effort in typing (particularly in repetitive tasks) by copying and pasting one or more input lines, editing, and re-**Entering** the resulting code. Hence learning a little about copying, pasting, and editing can be well worth the time and effort it takes.