

General Issues

- Every line must end with a semi-colon.
- Always include the `*` for multiplication, like `3*(x+y)` for $3(x + y)$.
- Maple is case-sensitive: `plot` is **not** the same as `Plot`.
- The **Expression** palette is very handy for providing a template for many of the expressions you'll need during the semester.
- The **Help** menu is your friend. Use it to find the exact syntax and options for the commands.
The **Help - Basic How To** has a good overview of most of the commands you'll need this semester.
- The **Tools** menu also has some useful options under **Assistants** and **Tutors** that might be useful to check out.
- If you get a question mark at the Maple input line, you need to set the Input Display to Maple Notation through the menu **Maple 9.5 - Preferences - Display - Input Display - Maple Notation**. Click on **Apply Globally**, and then you shouldn't have to do this again.
- These are most of the commands you'll need for the semester, but don't be afraid to explore and play around!

The Commands

<code>restart;</code>	Clears all definitions and reinitializes Maple
<code>Pi</code>	The constant π . Notice the <i>capital P</i>
<code>exp(x)</code>	The natural exponential function e^x To get the constant e , you use <code>exp(1)</code>
<code>sqrt(42+x)</code>	Just as you expect, this is $\sqrt{42 + x}$
<code>%</code>	Is the output from the last <i>executed</i> statement This is handy to perform an operation on the last output.
<code>w := x^2;</code>	Defines w to be the expression x^2 Whenever Maple sees <code>w</code> , it will substitute x^2
<code>unassign('w');</code>	Unassigns w
<code>f := x -> x^3 + cos(x);</code>	Defines a <i>function</i> $f(x) = x^3 + \cos(x)$ Then $f(Pi)$ would be $\pi^3 + \cos(\pi) = \pi^3 - 1$
<code>simplify();</code>	Attempts to algebraically simplify an expression
<code>solve(x^2+6x-5=0);</code>	Tries to solve the equation <i>exactly</i> without decimal approximation
<code>Diff(cos(x^2)*tan(x), x);</code>	The inert form of the differentiation function.
<code>Int(cos(x^2)*x^2, x);</code>	The inert form of the antidifferentiation function.
<code>value();</code>	The <i>exact</i> value of an expression. You can combine this with the <code>Diff()</code> , <code>Int()</code> , or <code>Sum()</code> commands to find a value.
<code>evalf();</code>	A numeric approximation of a value
<code>with(student);</code>	Loads the student calculus package which is needed for the commands <code>leftsum()</code> , <code>rightsum()</code> , <code>middlesum()</code> , <code>leftbox()</code> , <code>rightbox()</code> , and <code>middlebox()</code> .
<code>leftbox(cos(x^2), x=-1..2, 20);</code>	Shows a graph of L_{20} , the left sum with 20 subdivisions, for the integral $\int_{-1}^2 \cos(x^2) dx$.
<code>leftsum(cos(x^2), x=-1..2, 100);</code>	Computes L_{100} for $\int_{-1}^2 \cos(x^2) dx$. You will need to use <code>value(%)</code> ; or <code>evalf(%)</code> ; to get the value.
<code>plot(sin(x), x=-2..Pi);</code>	Plots $\sin(x)$ for $-2 \leq x \leq \pi$
<code>plot([x^2, sin(x)], x=-2..Pi);</code>	Plots the two functions x^2 and $\sin(x)$ for $-2 \leq x \leq \pi$ on the same set of axes