- There are two different interfaces for Maple. I think it's clearest to use the Document Mode.

  Probably the easiest way to do this is to go to **File** – **New** – **Document Mode**.

- The palettes on the left can be very handy for providing templates for Maple's syntax. In particular, the **Expression** and **Common Symbols** palettes will be especially useful for Calculus.

- You may eventually find that it is easier to enter some expressions on the keyboard rather than use the palettes. A few handy ones are:

  `Pi` for π
  `exp(x)` for e^x
  `sqrt(x)` for $\sqrt{x}$

  Be aware that Maple is case-sensitive: `pi` is *not* the same thing as `Pi`.

- The contextual menus provide access to many of the functions of Maple. If you right-click on an expression, Maple will give you the options to:

  Differentiate, Integrate, 2-D Plot, Evaluate at a point, Approximate, and many others

  Explore!

- While Maple has an extensive set of commands that you can type in directly, there are several very handy tools that provide a graphical interface to the commands. You can access these through **Tools** – **Tutors** – **Calculus Single Variable**

  You may find the **Approximate Integration** and **Volume of Revolution** tutors particularly helpful, but it's well worth your time to explore the other available Tutors as well.

  As you get more familiar with Maple, you may find that it is easier to enter commands directly rather than using the menus. There are a few commands that it will useful to know during the semester that are given on page 2.

- The **Help** menu is your friend. Use it to find the exact syntax and options for the commands.

  The **Help** – **Quick Reference** option is also worth exploring.

  If you've never used Maple before, don't get overwhelmed or discouraged. It's a remarkable tool that will help you explore and learn mathematics more deeply.

A few handy tricks

- Maple recognizes `%` as the output from the last statement. This can save you quite a bit of time since you don't have to retype the previous expression.
- You can also access the output from any statement by pressing `<cntrl>-L` in Windows or `<cmd>-L` on a Mac and entering the number of the output.

Basic commands

- `plot(sin(x), x=-2..Pi)`

  Plots $\sin(x)$ for $-2 \leq x \leq \pi$

- `plot([x^2, sin(x)], x=-2..Pi, color=[red,blue])`

  Plots x^2 in red and $\sin(x)$ in blue on the same set of axes for$-2 \leq x \leq \pi$

- `diff(cos(x^2)*tan(x), x)`

  Gives the derivative of $\cos(x^2)\tan(x)$ with respect to x.

- `solve(x^2+6x-5=0,x)`

  Tries to solve the equation *exactly* for x without decimal approximation

- `fsolve(x^2+cos(x)*x-3*x+1=0,x=2)`

  Finds a decimal approximation for the solution near $x = 2$. This can be handy if `solve( )` cannot find an exact solution.

- `w := x^2`

  Defines w to be the expression x^2 so that whenever Maple sees `w`, it will substitute x^2. This is useful if there's a complicated expression that you need to use several times and want to avoid having to type it in again.

For the Multivariable Section at the end of the semester

- `plot3d(sin(x)*cos(y), x=-3..3, y=0..5);`

  Creates a 3-D plot of $z = \sin(x)\cos(y)$

- ```
  plots[contourplot](4x^2+4y^2, x = -5 .. 5, y = -5 .. 5,
                     contours = 50, coloring = [yellow, red], filled = true)
  ```

  Creates a contour plot of $z = 4x^2 + 4y^2$ over the square $-5 \leq x \leq 5$, $-5 \leq y \leq 5$ with the lower z-values in yellow and the higher z-values in red.
  ```