- Homework G. Due Friday, 31 October 2003. This assignment will be extra credit. Create a Maple worksheet, carry out the following tasks and print out the worksheet to hand in. Use the example worksheet at http://www.ms.uky.edu/∼rbrown/courses/ma114.f.03/hwkG.mws to learn about the needed commands. You may use the "Open URL" command on the file menu to load the worksheet.

  1. Type your name and section number as the first line of the worksheet. If you leave spaces, this may confuse Maple. Use the format `RobertoCarlos006;` If you don't have enough to do, see if you can find out how type your name as text, rather than Maple input.

  2. Evaluate the integral
  $$\int_{-2}^{2} \sqrt{4 - x^2}\, dx.$$
  You will need to use the Maple word `int(f(x), x=a..b);` to compute the definite integral $\int_a^b f(x)\, dx$. Use the Maple words: `int`, `sqrt`, and `a^ b` which stands for a^b.

  3. Pick an interesting function f. Compute the derivative of f and plot f and the derivative of f on the same axes. As indicated in the example worksheet, you will need to use the documentation for the plot command to find out how to plot two functions on the same graph.

  4. Use the Maple word `sum` to compute the sum
  $$\sum_{k=1}^{101} \frac{1}{k^2 + k}$$

  5. Convert the answer to the previous calculation to a decimal answer with `evalf`. In Maple, we can always refer to the result of the previous calculation with `%`. A more elegant approach would be to assign a name to the answer of the previous step, and then apply `evalf` to the name.

  6. Find the partial fraction decomposition of the rational function
  $$\frac{1}{x^2 + x}$$
  Use the Maple command `convert` with the `parfrac` option.

- Where can I do this assignment? Maple 7 is available in most of the computer labs on campus. Look on the menu entry for mathematics programs. Unfortunately, the mathematics department has Maple 9.

October 20, 2003