## Math 291 Lab 10 Due **Tuesday** April 23, 2019 by **4:30 pm**

**Instructions:** Use  $\mathbb{L}^{AT}_{E}X$  to typeset a document containing each component described below. Turn in your lab in D2L Brightspace. You should submit your raw TeX (.tex) file, your compiled document, *and* your Maple file. Do *not* submit a .zip file.

You will be graded on both your raw T<sub>E</sub>X code and the accuracy of your compiled document. Don't forget to include Lab10 in your filename and include a four-line name block similar to the one you did for earlier labs. And note that there are three parts to this lab, so look on the next page too.

- 1. Use pstricks to create the same picture that was in #1 on Lab 9.
- 2. Use Maple to create the graph of a fifth-degree polynomial (that has four different critical numbers). Make sure that you choose the scales so that the graph shows the relevant regions in a reasonable level of detail. Export the graph as an .eps file and import it for this #2.
- 3. Use pstricks to recreate the Olympic ring logo (remember that the logo includes the colors). Make sure that you pay attention to the layering effects which ring is on top? There are different ways of making sure that works. [One option is to use both circles and arcs, with arc bits on top of circles that would look identical.] Choose a scale so that the logo takes up roughly 1/2 to 3/4 of your textwidth.
- 4. Use the pstextpath command that is illustrated by the Rincewind example (which is a reference to a series of books by Terry Pratchett, by the way) to write the first sentence below in the path of a sinusoidal curve. Have the first sentence 'above' the curve (so that it looks like the curve is underlining the sentence). Then, in the same diagram and using same curve, write the second sentence below, but have the second sentence 'below' the curve (so the curve looks like it is in between the two sentences). Again, choose a scale so that the words are easy to read and the diagram is roughly 1/2 to 3/4 of your textwidth.

First sentence: For damage control in Calculus I, when in doubt, take the derivative of the function, set it equal to zero, and solve.

Second sentence: For damage control in Calculus II, when in doubt, find the integral of the function.

5. Draw another diagram of your own devising in a single pspicture environment. You need to have at least six commands and use at least five colors. At least one of the colors should be a blend (using the !). The six commands must include at least four different commands of the commands listed on page 8 of the lecture and at least one of the last 8 commands that are listed on that page. Use the resizebox command to scale your diagram to 5 cm by 7 cm.