Math 2300-013: Quiz 9

Name: _____   Score: _____

Goal: The goal of this quiz is to provide you with an opportunity to reinforce your understanding of Taylor Series by solving an open-ended problem whose solution will require you to synthesize into one coherent whole several key ideas we've discussed in class. In your response, you will interact with and communicate mathematics in a creative way to tell a meaningful story to a calculus II audience.

Task: Your task is to respond to the following prompt in a typed essay:

> *The number π has fascinated humans for centuries during which mathematicians have devoted lots of energy to approximating π with high precision. How could you use the arctangent function to approximate π?*

In your response, include relevant explanations, graphs, calculations, and a discussion of how many terms you would need to obtain a certain degree of precision in your estimate. You may leave space for (neatly) written hand calculations, but otherwise, your essay should be typed and professional-looking. Please cite any sources and colleagues with whom you collaborated. You may use your notes, textbook, and classmates as resources, but your final write-up should be in your own words.

Due Date: This take-home quiz will be due at the beginning of class on Tuesday, November 14. Please include this page with your essay.