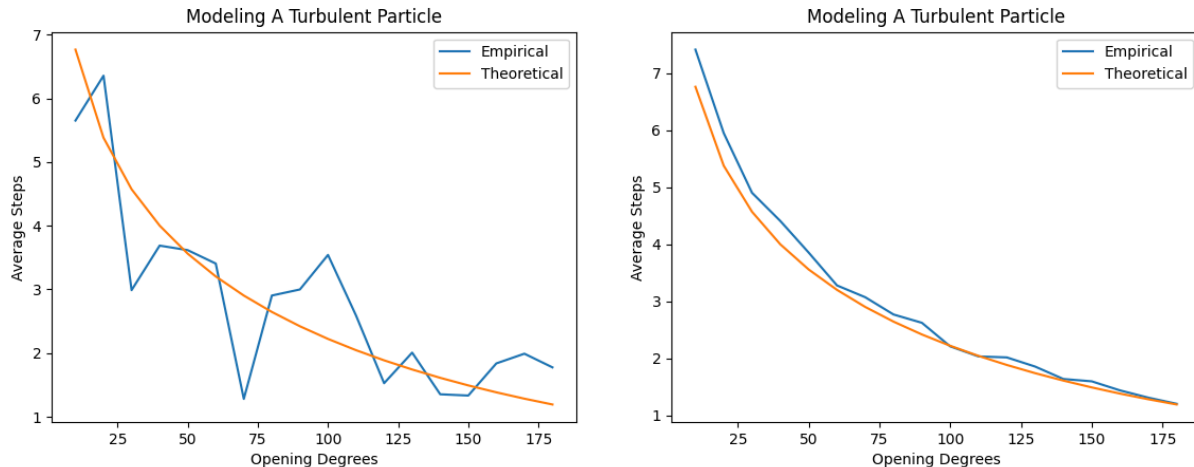


**1. How different are the results in your graph when using 10 vs. 1000 trials, and how different are they from the mathematically exact values? (Leave the other function arguments as described in project5.2.pdf.)**



✂ The graph on the left is the graph of 10 trials and the one on the right is the graph of 1000 trials.

The graphs are very different when using 10 versus 1000 trials. With the former, the trials have a much larger range of average steps, and are very different from the mathematical values. But the overall pattern still shows that the average steps the particle moves decrease as the opening widens, which is also predicted by the mathematically exact values. However, with 1000 trials, the range of average steps appears to be much smaller and far more closely represents the mathematically exact values.

**2. How long does the computation take to graph 10 vs. 1000 trials?**

The graph of 10 trials took around 8 seconds and the graph of 1000 trials took around 5 minutes and 20 seconds to finish the computation. 1000 trials may have returned results that are more accurate to the theoretical values but had a time tradeoff as it took much longer to compute.

**3. Now that you have had a few chances to practice working in groups, how did your group work go on this project? How did you arrange working together, and who did what? Did you need to deal with any conflicts?**

We made a groupchat where we could communicate about what was needed for the project and help each other. We all worked on the code separately, so we could compare and ask questions, and then split up the written component so each of us answered one question. For this project, we had a hard time because we were away for the fall break and one of our partners got very sick for a few days. But we were still able to distribute the work well and get everything done on time.