Problem Set #3

Assigned: September 9
Due: September 18

Part I: Watch the "Opposite of Infinity" video by Numberphile at the link below then answer the following questions.

https://www.youtube.com/watch?v=WYijIV5JrKg

1. What did you find to be the most interesting aspect of this discussion?

2. Reproduce Kepler's proof of the area of a circle.

3. What is the one big assumption that you need to make in order for Kepler's proof to work?

4. What is the moral of the story about Leibniz, Newton, and the invention of calculus?

Part II: Complete the following problems in *Classical Mechanics by Fowles & Cassiday*:
3.1, 3.2, 3.4, 3.9 (introductory problems)
3.12, 3.13, 3.19, 3.25 (challenge problems)