

Problem Set #4

Assigned: September 18

Due: September 27

Part I: Watch the following 3Blue1Brown video on a particularly challenging problem from the 2011 Math Olympiad then answer the questions below.

<https://www.youtube.com/watch?v=M64HUIJFTZM>

1. What did you find to be the most interesting aspect of this discussion?
2. What are the essential aspects of the proof? Enumerate them and provide a short description of the meaning of each major part of the whole proof (this does not mean that you are expected to provide a formal proof, only to outline its main ideas).
3. What was this person's message about the responsibility of the student?

Part II: Complete the following problems in *Classical Mechanics by Fowles & Cassiday*.
3.10, 3.16, 3.17, 3.21, 3.22