

Homework 9

Problem 1. 15 points. Prove that

- (a) A canonical transformation is equivalent to a symplectic map (locality symplectic linear transformation) – 5 points (25*)
- (b) A symplectic map (locality symplectic linear transformation) is a Canonical transformation – 10 points (50*)

Suggestion: you may ask for additional hints during next class.

This is a STAR problem. The rules are as follow:

- (a) if you find a standard solution (for example from a good Analytical mechanics book or on a Website) – you got nominal number of points. I rely on your comment at the end of the derivation.*
- (b) If you derived your own original proof – you have 5-fold increase in the score.*