Physics 440, Autumn 2019 **Reading Quiz 9 (6.1-6.4)**

Due November 19, 12:00pm

1. What concepts or ideas from this reading do you have questions about? These can be concepts that you didn't understand or would like to learn more about. For each concept, write a few sentences that describe the concept as best you can and include your questions about the concept.
2. On page 137, Hamill separates Hamilton's principle function into two pieces:
   $S(\alpha,q,t) = W(\alpha,q) + V(\alpha,t)$.
   What is he trying to achieve here, and how does it work?
3. In Section 6.2, Hamill solves the Hamilton-Jacobi equation for the simple harmonic oscillator, whose Hamiltonian is independent of time. How would the process be different if the Hamiltonian was an explicit function of time? What would change, and what would stay the same?