MECH 3140
Homework #3

Read Chapter 4.

Problems Using Newton's Methods (by Friday 2/1/19)
Chapter 4: 4-7, 13-17 (just derive the EOMs), 22-26, 52-54, 56, 65, 69.

When working the given problems using Newton’s Methods get in the habit of answering the following questions
  a. What is the order?
  b. How many DOF?
  c. Does this system reach steady state? If so what is the steady-state value?
  d. What are the equivalent mass, damping, and spring constants?
  e. Generate the equations of motion
  f. Solve the equations of motion for \( x(t) \) or \( v(t) \) if the differential equations are 1\(^{st} \) or 2\(^{nd} \) order

*Practice finding the transfer function between the input and output.*

Additional problems which can be solved using Newton’s methods (or Energy Methods, read Section 4.3, by Monday 2/4/19)

Chapter 4: 30, 32, 34-38, 41-42