Pre-Lab Practice: Atwood's Machine

Review the Textbook:

- *PHYS 1401: Serway & Vuille: Chap 4, Example 4.11, Problem 4.29*
- *PHYS 2425: Serway & Jewett: Chap 5, Example 5.7*

A 2.0 kg mass and a 1.0 kg mass are tied together and placed on a horizontal frictionless surface as shown in Figure 3. The 2.0 kg mass is pulled with a 6.0 N force.

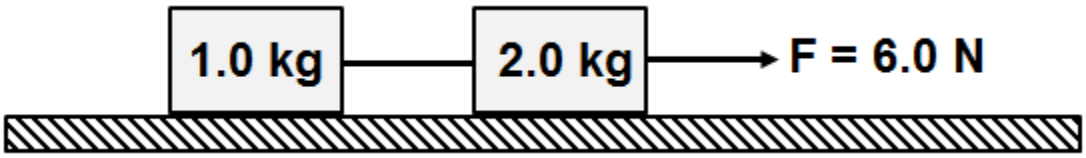

Figure 3. A system of objects pulled by a force.

1. What is the acceleration of the system?
   (2.0 m/s^2)

2. If the 1.0 kg mass were pulled with a 6.0 N force instead, what would be the acceleration of the system?
   (2.0 m/s^2)

3. What is the magnitude of the tension force on the 2.0 kg. object?
   (2.0 N)

4. What is the magnitude of the tension force on the 1.0 kg. object?
   (2.0 N)

5. Compare tension force vectors on 2.0 and 1.0 kg objects.
   (They are equal in magnitude but opposite in direction)

6. Two objects are connected by a string and the string run over the pulley making both masses suspended vertically. If masses of the objects are equal, what would be the acceleration of the system?
   (0.0 m/s^2)