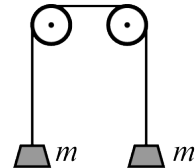


Name: \_\_\_\_\_

## LAB 5 PRE-LAB

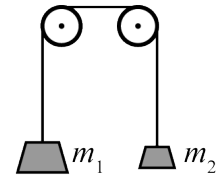
1. An object starts from rest and travels a distance  $h$  in time  $\Delta t$ . What is the formula for its constant acceleration  $a$ , in terms of  $h$  and  $\Delta t$ ?

2. If two equal masses are suspended from either end of a string passing over a massless, frictionless pulley (an Atwood machine), what kind of motion do you expect to occur? Why?



3. Suppose two *unequal* masses are suspended from the string of an Atwood machine.

- a. What motion do you expect to occur?



- b. Why do the two masses have the same magnitude of acceleration?

- c. Write a formula for the acceleration of the masses in terms of  $m_1$ ,  $m_2$ , and  $g$ .

- d. How would you expect the acceleration to change if you move mass from the light side to the heavy side, keeping the total mass constant?

- e. How would you expect the acceleration to change if you increase the mass of both sides by the same amount?