$g = 10\ N/kg$

Name:

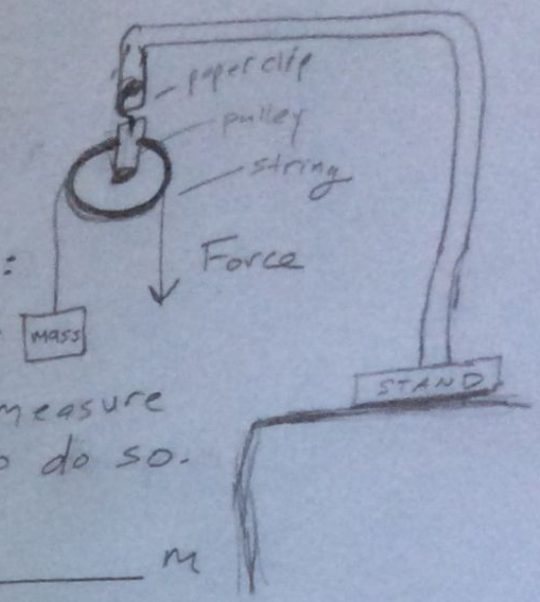
Hanging mass: _____

Force gravity : _____
on mass

Pulley Lab 2

Static - not moving
dynamic - moving.

Procedure A

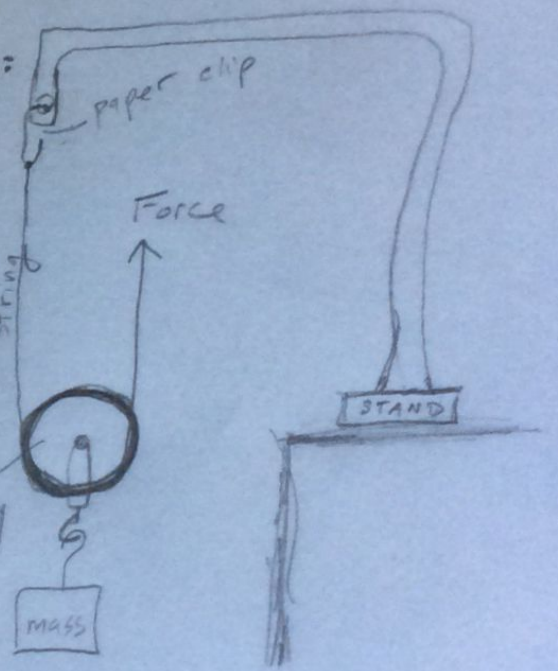


1. Set up the pulley system as shown here:
2. Measure static force using the force sensor.
3. Lift the hanging mass .20 meters, then measure and record the length of string required to do so.

Static Force: _____ N Length of String: _____ m

4. What happened to the force (now dynamic) as you initially lifted the mass with the pulley system? Why?

Procedure B - Use the same mass from procedure A.



1. Set up the pulley system as shown here:
2. Measure the static force using the force sensor.
3. Lift the hanging mass .20 meters, then measure the string length required to do so.

static force: _____ N String Length: _____ m

4. What happened to the force as you initially lifted the mass with the pulley system? Why?
5. After you initially begin to raise the mass, if you keep a constant velocity what happens to the force required to lift the mass? A. increases B. decreases C. remains constant D. Becomes Zero.

Additional Analysis Steps:
Consider the hanging mass and pulley as one single mass for procedure B.

1. Draw a force diagram for procedure A. Label all forces: Tension, F_g, F_{pull}
2. Write a literal net force equation for procedure A.
3. Repeat #1 and #2 for procedure B. Add numeric quantities to the diagrams based on the data you collected.

Extension:
Compare and contrast the string lengths required to lift the mass in procedures A and B. Formulate a hypothesis that explains your results.