Physics 100 (Stapleton) Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Pulley activity:

* + **Part 1:** Set up **three** pulley systems that lift a weight.  Each pulley system must have a different theoretical mechanical advantage that is not equal to one.  For each pulley system...
    1. Sketch the system, showing all of the pulleys and strings that are involved.  Label the number of pulleys and the number of strings.
    2. Measure an input distance and an output distance, and record them clearly on your diagram.
    3. Calculate theoretical mechanical advantage and record it clearly on your diagram.  MAtheoretical = Input distance / Output distance
    4. Calculate the weight of the weight, in Newtons.
    5. Measure the actual input force required to lift the weight.
    6. Calculate the actual mechanical advantage of the system.  MAactual = Output Force / Input Force
    7. Calculate your machine's efficiency.  Efficiency = MAactual / MAtheoretical

**Example:**

* + **Part 2:** Set up two pulley systems using a trucker’s hitch as the pulley, as shown in the diagram. Complete the steps above using these two pulley systems.

