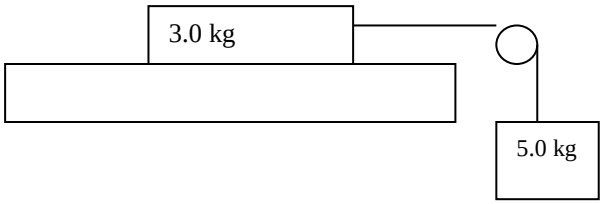
NAME: _____

Pulleys

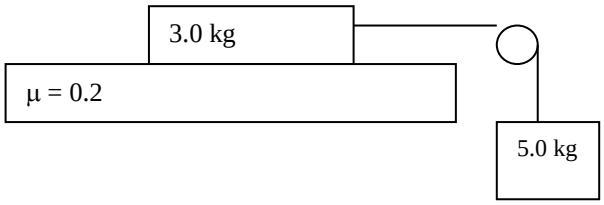
Draw a free-body diagram for each problem. Show all calculations. Determine the **acceleration** of each system and the **tension** in the rope/cable.

Practice

1. 

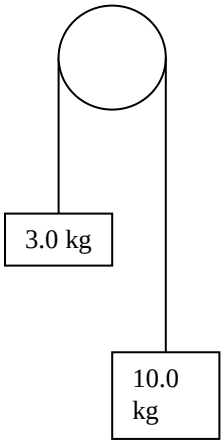
2. Repeat #1 using a 2.0 kg hanging block, a 4.0 kg block on the table.

3.



4. Repeat #3 using a 2.0 kg hanging block, a 4.0 kg block on the table, and $\mu = 0.1$

5.



6. Repeat #3 using a 4.0 kg mass and a 6.0 kg mass.

Homework:

1. Repeat practice #3 using a 2.0 kg hanging block, a 4.0 kg block on the table, and $\mu = 0.45$.
2. Using the above masses, what value of μ will produce too much friction for the object to move?
3. Repeat practice #5 using a 10.0 kg mass and a 12.0 kg mass.
4. In practice #6 and homework #3 both situations had a mass difference of 2.0 kg providing the same F_{net} value. Which produced the greater acceleration? Why?

Answers: 1) a=0.327 m/s^2, T=18.9 N, 2) μ=0.5, 3) a=0.89 m/s^2 , T=107 N, 4) Practice #4, less mass,