

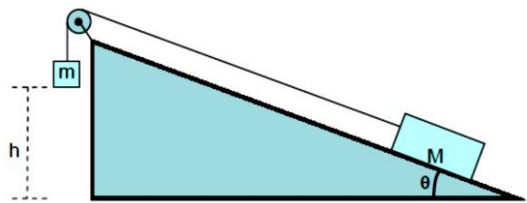
Name _____ Instructor name _____

You must show and explain all work neat and organized to receive credit. Please show each step for calculations. YOU MUST TURN IN THIS SHEET to have your assignment graded.

1. Define work and state the work-energy theorem. (3 pts)

2. Give an example of a conservative force and a non-conservative force. Please explain, along with examples. (2 pts)

3. The figure on the right shows a system of two masses connected by a string. As m falls a distance h , M accelerates up the plane. The coefficient of friction between M and the inclined plane is μ . Starting from $F = ma$, show in detail that the change of kinetic energy is given by $\Delta K = \frac{1}{2}(m + M)[v_f^2 - v_i^2]$. Do not assume that system starts at rest. (15 pts)



What is the change in potential energy on the system after the m has fallen a distance h ?

What is the work done by friction on the system?