

Sample Calculation for Lab 04

A mass $M=7$ kg is raised upward through a distance of 10 m in 3 s. Calculate, showing how the units transfer through, the following:

- (1) The raising is done by 3 ropes connected to the mass. When the mass is at the top, calculate the tension in each rope (the mass has stopped).
- (2) Calculate ΔU .
- (3) Calculate the power expended.
- (4) Now release the mass. After the mass falls through the distance of 3 m, calculate the final kinetic energy.
- (5) How fast will the mass be moving after it has fallen through this distance.
- (6) Consider the picture shown below. The mass has is 1 kg. Find the tension in each of the strings.

