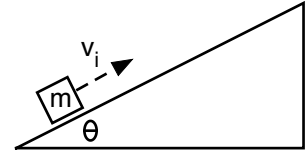


Force Problems III

For all 4 questions, include a correct free body diagram for each mass.

1. A 200 gram mass is launched up an incline with a speed of 3 m/s. There is a frictional force of 0.8 N acting on the mass and the base angle of the incline is 35° . How far up the incline does the mass travel?

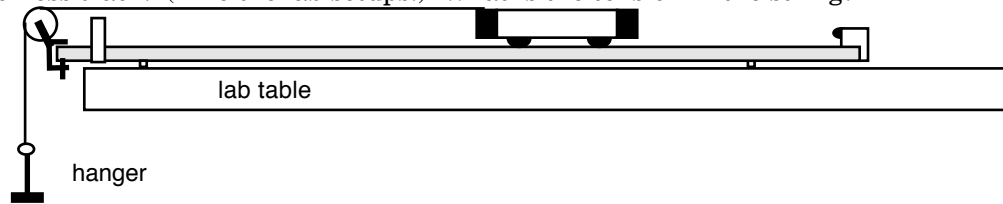


2. You are having an enjoyable day in Boston going up and down the elevators in the Prudential Building. You are at the top of the building and press the down button. You also happen to be standing on a great metric bathroom scale, and you notice that the scale reads only 600 N while you are accelerating down. (Your real mass is 65 kg.) What was your acceleration?

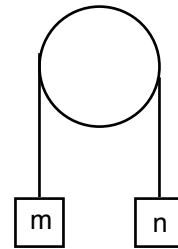
Force Problems III

For #3 & #4, also write out Newton's Second Law for each mass and for the system.

3. A hanger of mass m is suspended by a string which is attached to a cart of mass M on a level, frictionless track. (Like the lab setups.) What is the tension in the string?



4. Two masses are connected by a string around a massless, frictionless pulley. Mass m is 3 kg. The system is accelerating at a rate of 2.5 m/s^2 in a clockwise direction. What is the mass of “n” and what is the tension in the string?



Force Problems III

*Answers*1) 0.46 m 2) 0.77 m/s^2 down3) $T = mMg/(m+M)$ 4) 37.5 N & 5 kg