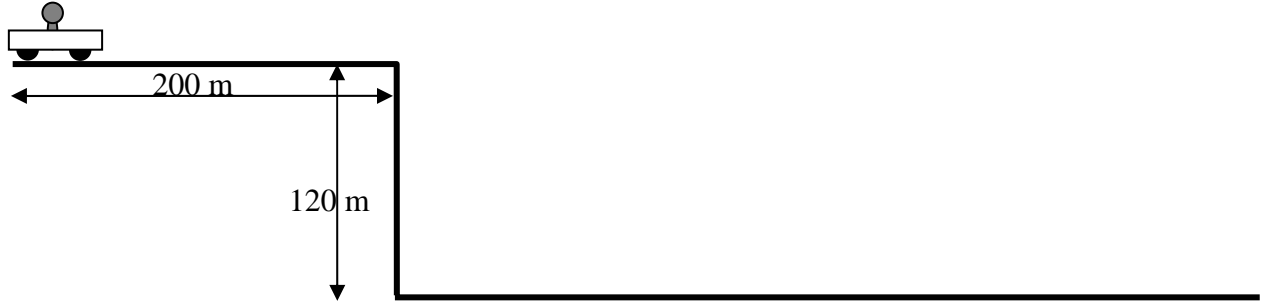


Physics 151 Class Exercise: Multi-Step Problems

1. A 1500 kg land speed car is at rest 200 m from the edge of a 120 m high cliff. The driver (distracted over an upcoming examination) turns on the jet thrusters (which together deliver 2400 N of force) just until he reaches the edge of the cliff. How far from the base of the cliff does he crash? (Hint: This is a multi-step problem. You should carefully strategize before beginning and try to break the problem up into a series of smaller problems.)



2. Jake drags a crate across the floor with a force of 450N at an angle of 38° with respect to the horizontal. A frictional force of 125 N acts in the negative horizontal direction due to the crate rubbing against the floor. If the crate is initially at rest and after 3 seconds has moved 14.5 m, what is the mass of the crate? (Hint: This is a multi-step problem. You should carefully strategize before beginning and try to break the problem up into a series of smaller problems.)

