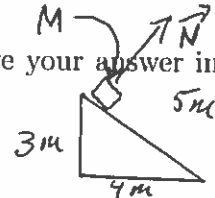


1. A block of mass m starts from rest at the top of an inclined plane as shown below.

While the block is sliding down the frictionless incline:

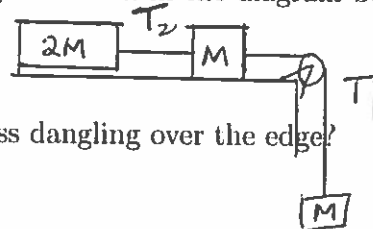
- (a) What is the magnitude of the normal force on the block? Give your answer in terms of M , g and the dimensions of the inclined plane.



- (b) What is the acceleration? Give your answer in terms of M , g and the dimensions of the inclined plane.

- (c) What is the speed of the mass at the bottom of the incline? Give a numerical answer, with the proper units.

2. Three masses, of mass $2M$, M and M are tied together with strings and arranged with two of them on a table top, and the third dangling over the edge of the desk with the string running through a massless pulley as shown in the diagram below. Give all of your answers in terms of m and g .



- (a) What is the acceleration of the mass dangling over the edge?

- (b) What is the tension, T_1 ?

- (c) What is the tension, T_2 ?

- (d) Now, we switch the order of the masses on the table, so that M is on the left and $2M$ is on the table to the right. Now what is the tension, T_2 , of the string on the left?