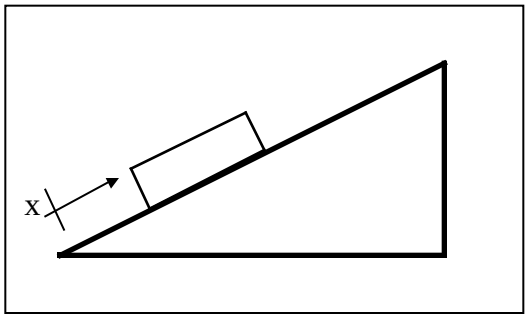
A. A block of wood is sliding up an incline, as shown in the picture below. The block reaches the top of the incline, turns around, and slides back down the incline. Assume there is no friction.



Frictionless

1. In the space below, sketch a free-body diagram for the block

   a. on its way up the incline,

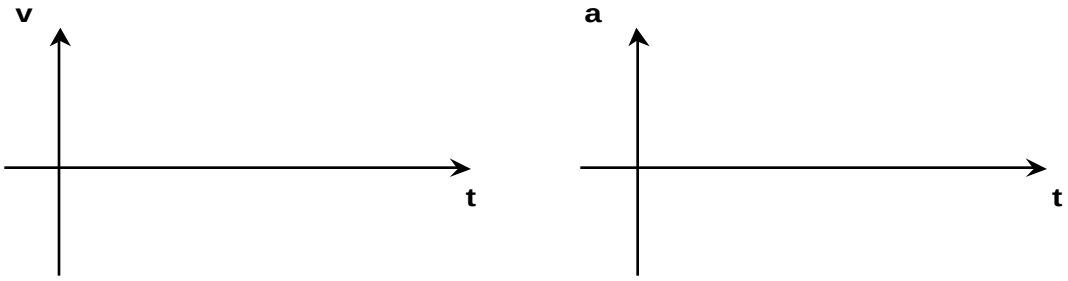
   b. on its way down the incline, and

   c. at the top of the incline .

   Label all forces clearly.

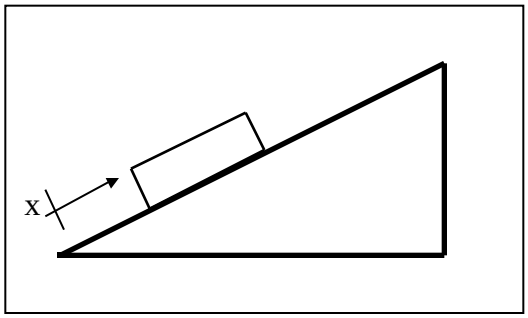
Block Moving Up Incline	Block Moving Down Incline	Block At The Top Of The Incline

2. In the space below, sketch the velocity vs. time and acceleration vs. time graphs for the block of wood during its *ENTIRE* motion up and down the incline.



Explain how you determined the shapes of your graphs.

B. Consider the same situation as before, except that now there *IS* friction between the block and the incline.



There is friction.

1. In the space below, sketch a free-body diagram for the block

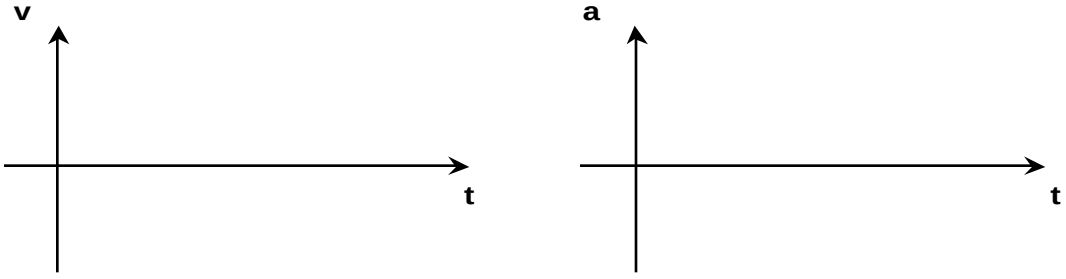
   a. on its way up the incline and

   b. on its way down the incline.

Label all forces clearly.

Block Moving Up Incline	Block Moving Down Incline

2. In the space below, sketch the velocity vs. time and acceleration vs. time graphs for the block of wood during its *ENTIRE* motion up and down the incline.



Explain how you determined the shapes of your graphs.