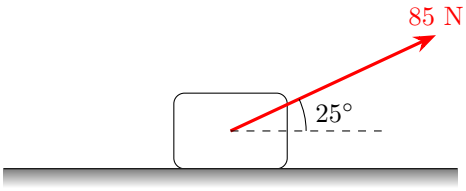
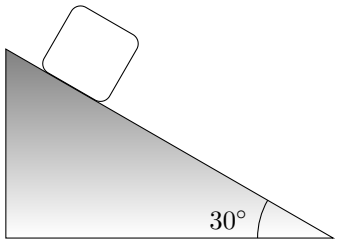
Name: Date: Period:

Forces at an Angle

1. Calculate the (a) acceleration and (b) normal force acting on this block of $m = 5$ kg being pulled by 85 N of tension at an angle of 25° above horizontal on a frictiionless surface.



2. Consider a 17-kg box sitting on a ramp that has an angle of elevation of 30°.
   (a) Assuming the ramp is frictionless, calculate the acceleration.



   (b) Assuming the ramp is frictionless, calculate the normal force acting on the box.

   (c) Now, if there was friction, what would need to be the minimum coefficient of static friction such that the box would stay at rest and not slide down the ramp?