1. A 70 kg box is pulled by a 400 N force at an angle of 30° to the horizontal. The force of kinetic friction is 75 N.

    a. Draw a qualitative force diagram for the box (not the sweaty man)
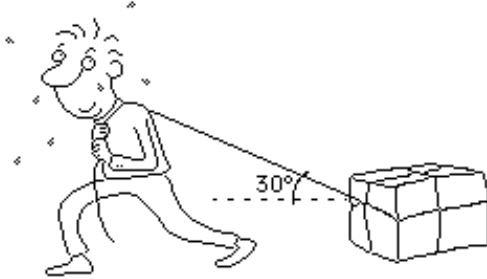
    b. Create equations that describes the forces that are equivalent and a net force equation for where there is a leftover force.

    c. Use the equation above to determine the acceleration of the box

    d. Determine the size of the normal force on the box.
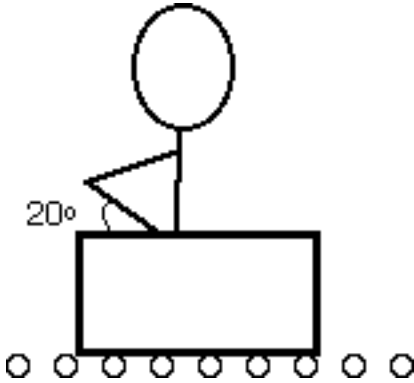
2. A worker pushes a 7 kg shipping box along a roller track. Assume friction is small enough to be ignored because of the rollers. The worker's push is 25 N directed down and to the right at an angle of 20°.

a. Draw a force diagram for the block and create equations that describe the forces.

20°

b. Determine the horizontal-component of the worker's push.

c. Write a net force equation for the horizontal forces on the block.

d. Determine the acceleration of the block.

e. Determine the normal force on the block.