

A 10 N force is applied to a 6 kg box, as shown below.



Assume the system is frictionless.

- a. Determine the weight of the box in newtons. Show your calculations and include units in your answer.
- b. In your Student Answer Booklet, draw a force diagram for the box. Include labels and represent the relative magnitude of each force.
- c. Determine the acceleration of the box. Show your calculations and include units in your answer.

Now assume friction is introduced into the system.

d. Describe one change to this system that would allow it to achieve the same acceleration as the frictionless system.