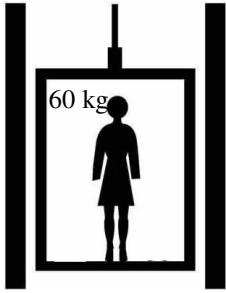


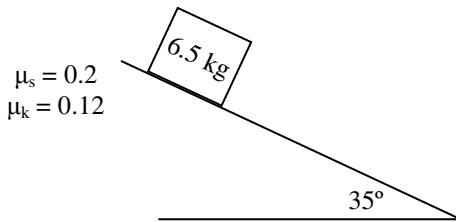
2011 PreAP Forces 12



See "Normal Force" notes if you need help.

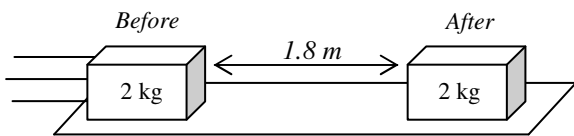
1. A 60 kg lady is on an elevator and experiences a normal force of 820 N.
 - A. * What is the acceleration of the elevator?
 - B. If the elevator is moving down, is it stopping or starting?

2. Which of the following **MUST** point in the same direction: mass; net force; velocity; time; force; distance; acceleration.



3.
 - A. If the angle decreases, the force down the ramp:
 - B. If the angle increases the normal force:
 - C. * Calculate the object's acceleration.

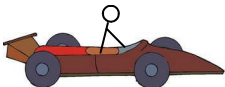
- D. * If the object is 3.5 m up the ramp and starts at rest, how fast is it going at the bottom of the ramp?



4. A 2 kg box slides to a stop in 0.65 seconds.
 - A. * Calculate the acceleration of the object. (*Since you don't have force, use a different equation with acceleration in it.*)

- B. Calculate the force of friction and the coefficient of friction (μ).

5. What provides the centripetal acceleration for the following situations?
 - A. A car turning a corner.
 - B. The earth moving around the sun.
 - C. A ball being spun around on a string.
 - D. A roller coaster at the bottom of the track.



6. Slim Jim and his go-cart are 280 kg. He is moving 12 m/s as it moves around a circular track that has a radius of 35 m.
 - A. Which way does the centripetal acceleration point?
 - B. What force provides the centripetal force that keeps the cart moving in the circle?
 - C. * Calculate the centripetal acceleration of the cart.

- D. Calculate the force keeping the cart in the circle.

- E. Describe the path of the car after it hits a patch of ice.

1A) 3.7 m/s^2

3C) 4.75 m/s^2

3D) 5.77 m/s use a kinematic equation

4A) -0.85 m/s^2

7C) 4.1 m/s^2