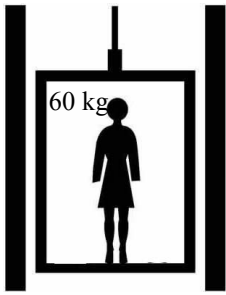


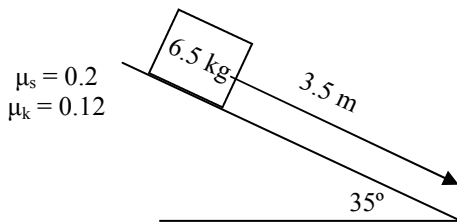
PreAP Forces 11



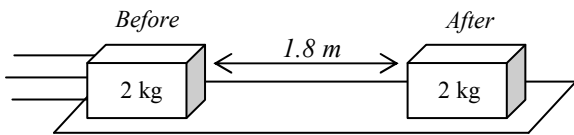
See "Normal Force" notes if you need help.

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?
 - C. If the lady were standing on a bathroom scale, what would it read?

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? You do have enough information.

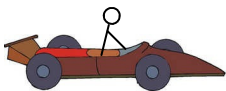


4. A 2 kg box slides to a stop in 0.65 seconds.
 - A. * Calculate the acceleration of the object. (Since you don't have force, use a different equation with acceleration in it.)

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

5. What force provides the centripetal acceleration for the following situations? These are normal forces we already know.
 - 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