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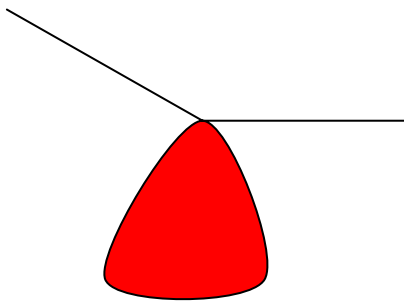
Section C D F



Forces III

1. A 52 kg person escapes from a burning building by jumping from a window 35 m above a catching net. Assuming that air resistance exerts a 95 N force on the person during the fall, determine the person's velocity just before hitting the net.

2. If the left cable is inclined at an angle 37° above the horizontal, find the force exerted by each cable to support the 800 N bag in Figure 4-32.



3. A 94 kg clock is initially at rest on a horizontal floor.
 - a. If it takes a 656 N horizontal force to set it in motion, find μ_s .
 - b. After the clock is in motion, if a horizontal force of 555 N keeps it moving with a constant speed, find μ_k .

4. A 3.50 kg block starts from rest at the top of a 30.0° incline and slides 2.60 m down the incline in 1.50 s.
- Find the acceleration of the block.
 - Find the coefficient of kinetic friction between the block and the incline.
 - Find the frictional force acting on the block.
 - Find the speed of the block after it has slid a distance of 2.60 m.
5. The coefficient of static friction between the 22 kg crate and the 35.0° incline of Figure 4-34 is 0.1. What is the minimum force, F , that must be applied to the crate perpendicular to the incline to prevent the crate from sliding down the incline?

