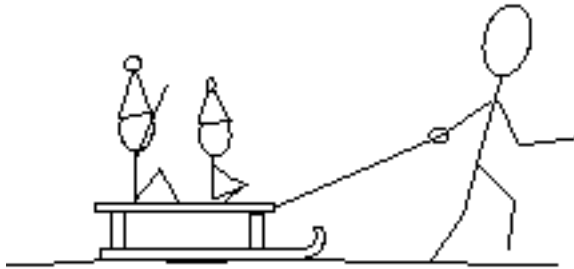




4. After falling from rest at a height of 30 m, a 0.50 kg ball bounces upward, reaching a height of 20 m. The contact between the ball and ground lasted 20 milliseconds. Find the average force exerted on the ball by the ground. (Break the problem into pieces. Do a bunch of kinematics first, then apply Newton's 2nd law.)

5. In the diagram below, the cord makes a  $25^\circ$  angle with the horizontal, the mass of the sled and occupants is 100 kg. The tension in the cord is 120 N and the friction force is 15 N. Find the acceleration of the sled.



6. The 60 kg skier shown below is skiing down a  $35^\circ$  incline with a coefficient of friction is 0.08. Determine the acceleration of the skier.

