Quiz #4

Name: _____

1. What is the acceleration of mass 2 if there is no friction on Mass 1?
   a. Less than 9.8 m/s^2
   b. 9.8 m/s^2
   c. More than 9.8 m/s^2

2. If a big truck hits a small car, which exerts the larger force on the other?
   a. The big truck exerts the larger force on the car
   b. The small car exerts the larger force on the truck
   c. Neither, they exert equal force on each other.

3. You blow up a balloon but don't tie off the end. Then you let it go. Draw a diagram showing all the action reaction pairs of forces on the balloon.

4. A person pulls with 25N of force on a box with an angle of 35° above the horizontal. If the mass of the box is 30 kg, will it move if the coefficient of friction between the box and the floor is 0.10?

5. If a person pulls on the box in question 3 with 40 N of force at an angle of 35° above the horizontal, how far will it travel in 5.0 s if it starts from rest? Assume the coefficient of kinetic friction also equals 0.1.

$\Sigma\vec{F} = m\vec{a}$ $F_g = mg$ $f = \mu n$ $\vec{g} = -9.8 m/s^2$

$\sin\theta = opp/hyp$ $\cos\theta = adj/hyp$ $\tan\theta = opp/adj$

$x = x_o + v_o t + \frac{1}{2} at^2$ $v = v_o + at$ $v^2 = v_o^2 + 2a(x-x_o)$