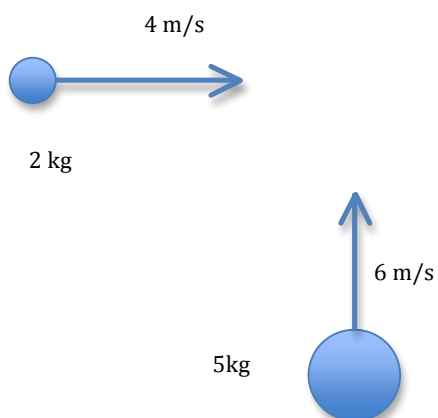


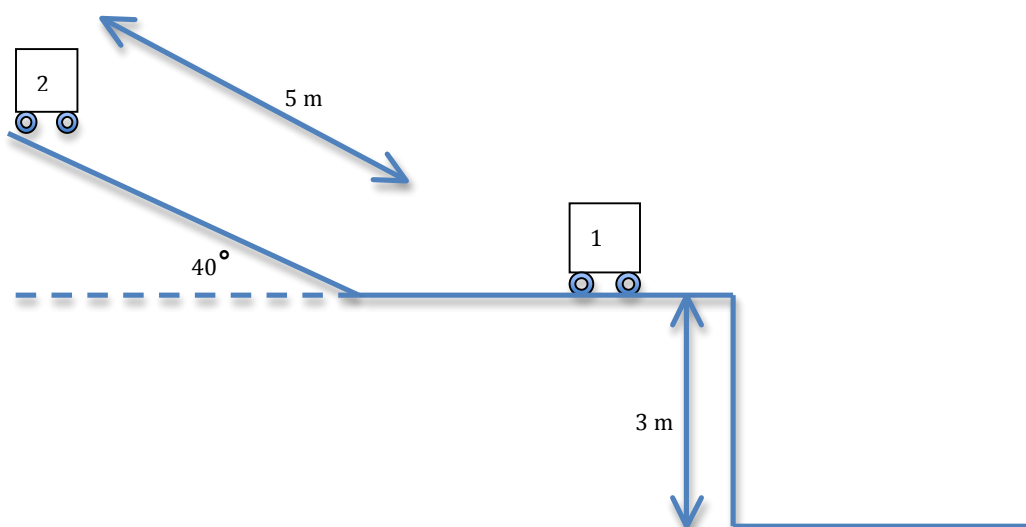
Momentum Review

1. A 2 kg cart collides elastically with a 3 kg cart. Each cart was moving toward each other at 4 m/s. After the collision, the 2 kg cart is seen moving backward at 5 m/s. Find the speed and direction of the 3 kg cart.



2. The two clay balls as shown are heading for a collision that sticks. Find the speed and direction of the combined lump.

3. A bullet, mass 0.01 kg, strikes a wood block of mass 1 kg. If $\mu = 0.1$, how far will the block and bullet move if the bullet had an initial speed of 200 m/s.
4. A box, mass = 1 kg, is sitting on a flat surface where $\mu = 0.3$. A student throws a 0.1 kg ball into the box and both the box and the ball skid to a stop in 2.5 m. Find the initial speed of the ball.
5. The 2 kg cart is going to roll down the frictionless incline and strike and stick to the 1 kg cart. How far from the base of the 3 m tall cliff does the pair land?



Momentum Review

6. *Jeremy's Problem*

The duck, heading south for the winter at 10 m/s, is struck by the 0.1 kg arrow moving at 60 m/s. Where does the poor dead duck hit the ground in relation to the point where it was struck?

