

Name _____

Movie Watching Pet Peeve

When you have finished this, go to the website and check your answers. If you got a problem wrong, cross it off on the front, and do it correctly on the back.

Show your work, and circle your answers and use sig figs to receive full credit.

1-2. A 145 gram air track glider going 0.150 m/s collides head on with a 301 gram glider going the other way at 0.430 m/s. The gliders then stick together.

1. What is their post collision speed? (save this number without rounding...)

2. How much kinetic energy is lost in the collision? (Calculate the KE before, and after. Convert grams to kg)

3-4. A 0.0068 kg bullet traveling 392 m/s straight upwards sticks into a 0.2450 kg block of wood.

3. What is the velocity of the block and bullet just after the collision?

4. How high does the block of wood rise with the bullet in it before it starts to fall back down?

5. A bullet with a mass of 2.60 grams strikes a ballistic pendulum has a mass of 345 grams. If it swings up to a height of 0.356 m, what was the speed of the bullet before it hit the pendulum?