PHYS 211 Sample Test Question

1. Define momentum.

2. State the principle of conservation of momentum.

3. State the principle of conservation of energy.

4. In the figure here, a 13.2 g bullet moving directly upward at 1280 m/s strikes and passes through the center of mass of a 3.6 kg block initially at rest. The bullet emerges from the block moving directly upward at 520 m/s.
a. Identify the collision (elastic, inelastic, or completely inelastic) between the bullet & block.
b. Using the conservation of momentum, find the speed of the block, just after the bullet emerges.
b. To what maximum height does the block then rise above its initial position?

