

PH141 Fall 2009
HW 8 Supplemental Problems
(Must be handed in with HW 8)

Conceptual Questions

1. Two objects have the same momentum. Do the velocities of these objects necessarily have (a) the same directions and (b) the same magnitude?
2. (a) Can a single object have kinetic energy but no momentum?
(b) Can a system of two or more objects have a total kinetic energy that is not zero but a total momentum that is zero? Account for your answers.
3. On a distant asteroid, a large catapult is used to throw chunks of stone into space. Could such a device be used as a propulsion system to move the asteroid closer to earth? Explain.