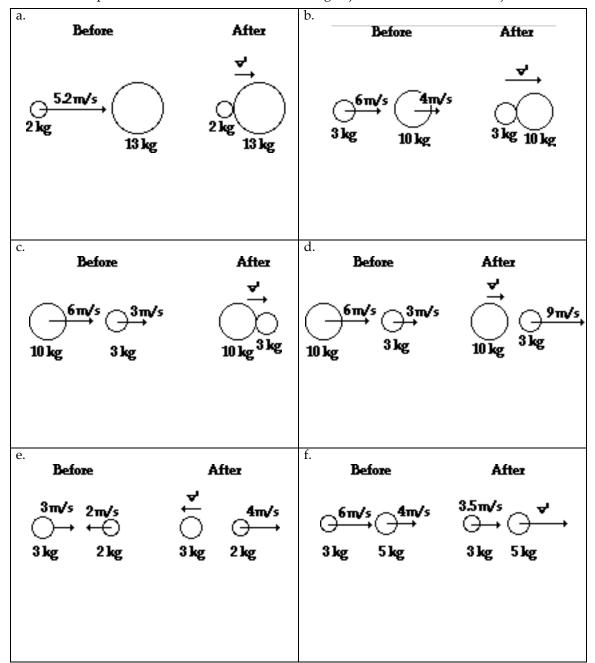
Momentum Problem-Solving

Read from Lesson 2 of the Momentum and Collisions chapter at The Physics Classroom:

http://www.physicsclassroom.com/Class/momentum/u4l2d.html http://www.physicsclassroom.com/Class/momentum/u4l2e.html

MOP Connection: Momentum and Collisions: sublevels 8 and 9

1. Determine the post-collision velocities of the following objects or combination of objects.



Momentum and Collisions

2.	A 2.1-kg brick is placed gently upon a 2.9-kg cart originally moving with a speed of 26 cm/s. Determine the post-collision speed of the combination of brick and cart.
3.	A 98-kg fullback is running along at $8.6\mathrm{m/s}$ when a 76-kg defensive back running in the same direction at $9.8\mathrm{m/s}$ jumps on his back. What is the post-collision speed of the two players immediately after the tackle?
4.	A 0.112-kg billiard ball moving at $154~\rm cm/s$ strikes a second billiard ball of the same mass moving in the opposite direction at $46~\rm cm/s$. The second billiard ball rebounds and travels at $72~\rm cm/s$ after the head-on collision. Determine the post-collision velocity of the first billiard ball.
5.	A 225-kg bumper car (and its occupant) is moving north at 98 cm/s when it hits a 198-kg car (occupant mass included) moving north at 28 cm/s. The 198-kg car is moving north at 71 cm/s after the head-on collision. Determine the post-collision velocity of the 225-kg car.
6.	A 4.88-kg bowling ball moving east at 2.41 m/s strikes a stationary 0.95-kg bowling pin. Immediately after the head-on collision, the pin is moving east at 5.19m/s . Determine the post-collision velocity of the bowling ball.