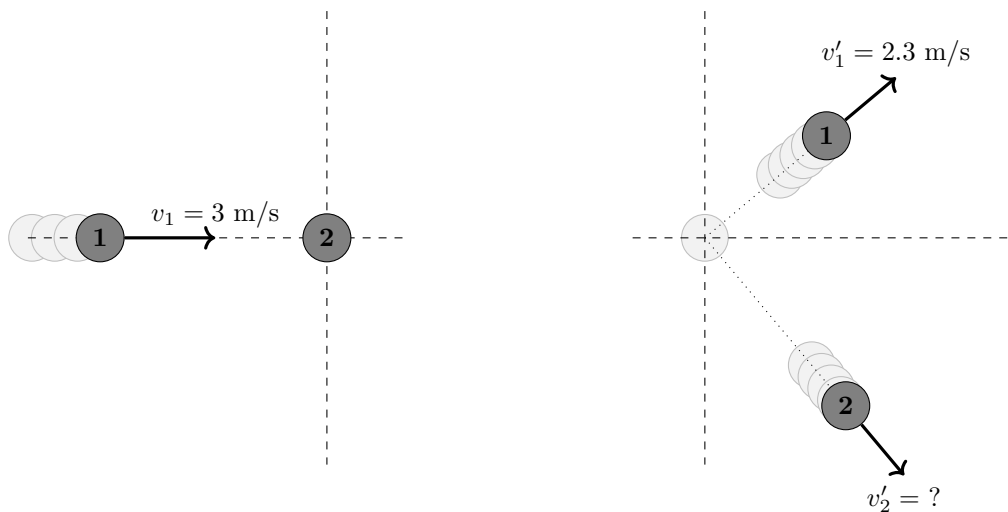


## Momentum in Two Dimensions

1. A 6-kg pool ball moving due east at 3 m/s collides with a second 4-kg ball initially at rest. After the collision, the first ball moves 2.3 m/s at a direction  $40^\circ$  north of east. Find the magnitude and direction of the momentum of the second ball. Also find its velocity.



Name:

Date:

Period:

---

2. A truck with a mass of 5000 kg is traveling *north* with a velocity of 13 m/s. At an intersection, it collides with a car ( $m = 1500$  kg) traveling *east* with a velocity of 20 m/s. What is the velocity of the vehicles after the collision (before friction has had a chance to take effect)? Assume they stick together after the crash.

