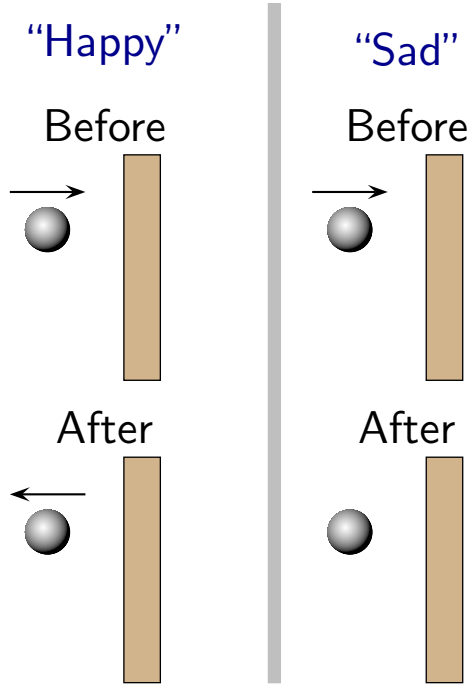
Question 1

Two balls are each thrown with the same speed at identical wooden blocks initially at rest. The masses of the balls are identical but one ("happy") rebounds from the block and the other ("sad") stops.



Prior to collision the speeds of the balls are identical. In which case is the speed of the block greatest after the collision?

1. Speeds are the same.
2. "Happy" ball collision.
3. "Sad" ball collision.

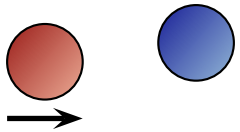
Question 2

You are initially at rest on the ground and you jump up and return back down to the ground. Which of the following is true (ignore Earth's rotation and orbit around the sun)?

1. Earth is absolutely stationary during this process.
2. Earth rebounds in the opposite direction from you and keeps moving in that direction.
3. Earth rebounds in the opposite direction from you and keeps moving in that direction but slows to a stop.
4. Earth rebounds in the opposite direction at a constant velocity, stops and then reverses direction at a constant velocity.
5. Earth rebounds in the opposite direction, slows to a stop, reverses direction. Velocity constantly changes.

Question 3

Two identical hockey pucks undergo a collision in which one is initially at rest.



Which of the following is *not* a possible way in which the pucks scatter off each other?