

### Answer on Question #68006-Physics-Mechanics-Relativity

Laquanda uses a trick shot off of the eight ball to sink the 12 in the corner pocket. She imparts a velocity of 45m/sec to the cue ball which stops instantly after the collision, the eight ball follows the twelve slowly into the pocket at 5m/sec. What is the speed of the twelve ball as it goes into the pocket if all the balls are equally weighted at .16kg?

#### Solution

From the conservation of momentum:

$$mv_{cue} = mv_8 + mv_{12}$$

$$v_{cue} = v_8 + v_{12}$$

$$v_{12} = v_{cue} - v_8 = 45 - 5 = 40 \frac{m}{s}$$

**Answer:  $40 \frac{m}{s}$ .**

Answer provided by <https://www.AssignmentExpert.com>