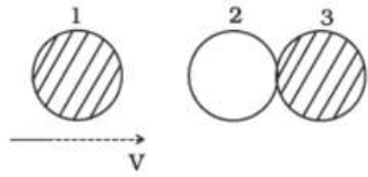
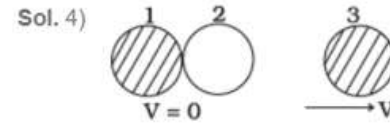


1. Two identical ball bearings in contact with each other and resting on a frictionless table are hit head-on by another ball bearing of the same mass moving initially with a speed V as shown in Fig.



If the collision is elastic, which of the following is a possible result after collision?

- 1) 1) $\vec{v} = 0$ $\vec{v} / 3$
- 2) 2) $\vec{v} / 1$ $\vec{v} / 2$ $\vec{v} / 3$
- 3) 3) $\vec{v} = 0$ $\vec{v} / 2$
- 4) 4) $\vec{v} = 0$ \vec{v}



When two bodies of equal mass collide elastically, their velocities are interchanged.

When ball 1 collides with ball 2, then velocity of ball 1, v_1 becomes zero, and velocity of ball 2, v_2 becomes v , i.e.,

$$v_1 = 0 \Rightarrow v_2 = v$$

similarly,

when ball 2 collides with ball 3 $v_2 = 0$, $v_3 = v$