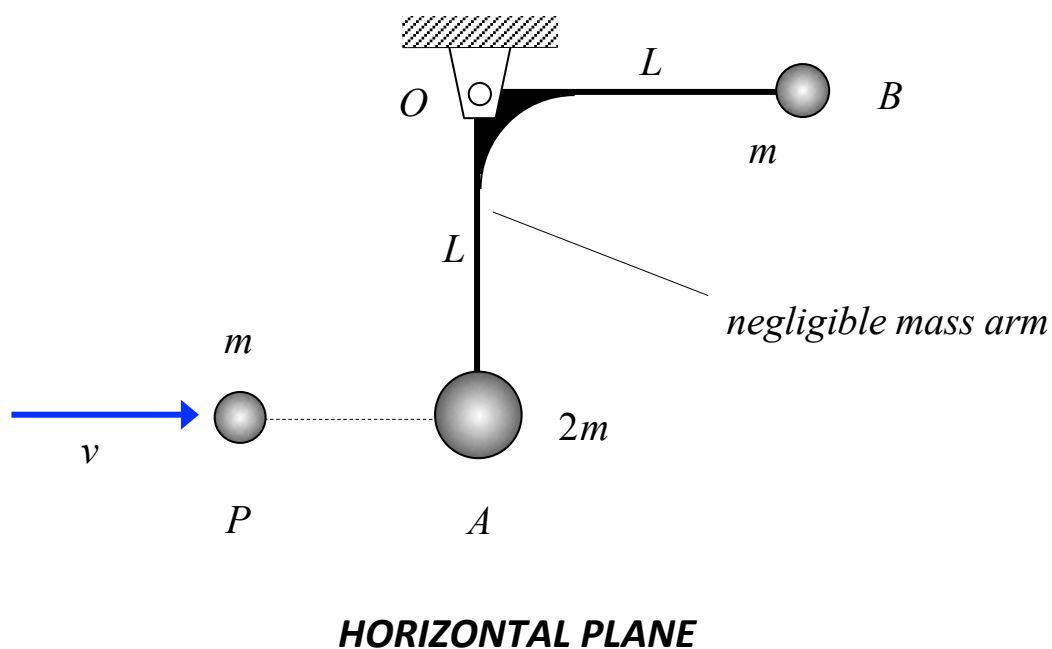


**Homework H4.V**

**Given:** Particles A and B (having masses of  $2m$  and  $m$ , respectively) are attached to a rigid L-shaped arm, with the arm having negligible mass. With A and B being initially at rest, a third particle P (having a mass of  $m$ ) impacts A with a speed of  $v$ , with the velocity of P before impact being perpendicular to OA. The coefficient of restitution for this impact is  $e$ . All motion of the system is in a horizontal plane.

**Find:** Determine the angular speed of the arm after impact.



Leave your answers in terms of, at most:  $m$ ,  $L$ ,  $v$  and  $e$ .