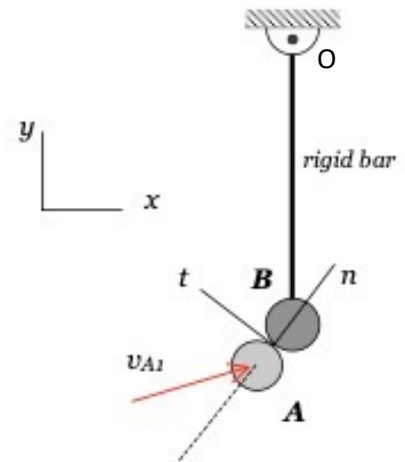


Quiz 6 – BONUS

Particle A strikes a stationary particle B with a speed of  $v_{A1}$ . Particle B is attached to a rigid bar having negligible mass that is pinned to ground O. Circle all of the correct responses below. The problems may have more than one correct response. You must correctly complete the associated FBDs in order to receive full credit.

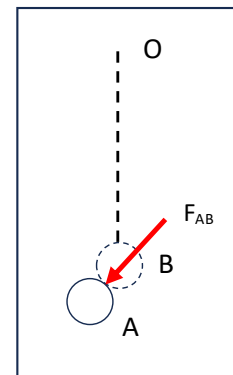


**Problem 6.1**

For the system made up of A alone during impact:

- (a) linear momentum in the x-direction is conserved  $\Sigma F_x \neq 0$
- (b) linear momentum in the y-direction is conserved  $\Sigma F_y \neq 0$
- (c) linear momentum in the n-direction is conserved  $\Sigma F_n \neq 0$
- (d) linear momentum in the t-direction is conserved  $\Sigma F_t = 0$
- (e) energy is conserved *mechanical energy is not conserved during impacts*
- (f) none of the above

$$\Sigma F_x = 0$$

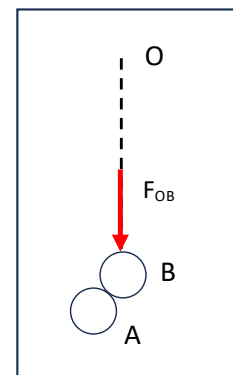


**FBD**

**Problem 6.2**

For the system made up of A and B together during impact:

- (a) linear momentum in the x-direction is conserved  $\Sigma F_x = 0$
- (b) linear momentum in the y-direction is conserved  $\Sigma F_y \neq 0$
- (c) linear momentum in the n-direction is conserved  $\Sigma F_n \neq 0$
- (d) linear momentum in the t-direction is conserved  $\Sigma F_t \neq 0$
- (e) energy is conserved *mechanical energy is not conserved during impacts*
- (f) none of the above



**FBD**