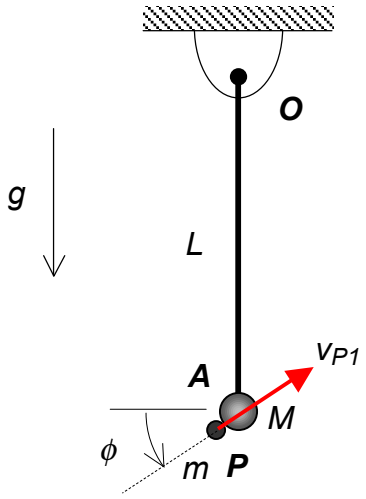
Homework H.4.T

Given: Rigid arm OA (having length L and having negligible mass) is pinned to ground at end O. A particle of mass M is attached to end A of OA. At instant "1", a pellet P (having a mass of m) strikes the stationary particle A with a speed of v_{P1} in the direction shown below in the figure. At the end of a short time interval impact, P sticks to A.

Find: Determine the angular speed of arm OA immediately after P sticks to A.



VERTICAL PLANE

Use the following parameters in your analysis: $\phi = 30°$, $L = 4$ ft, $mg = 8$ lb, $Mg = 12$ lb and $v_{P1} = 150$ ft/s.