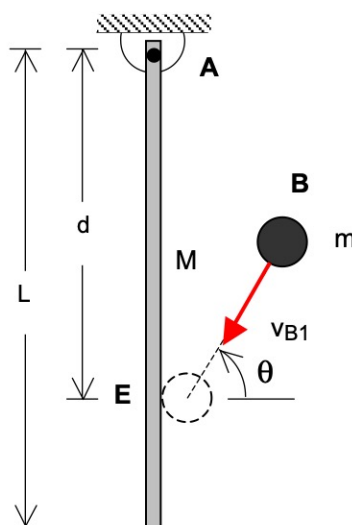


Homework H5.M

Given: Particle B (having a mass of m) initially travels on a smooth HORIZONTAL surface with a speed of v_{B1} . This particle strikes point E on a stationary thin homogeneous bar (having a mass of M), with end A of the bar being pinned to ground. The coefficient of restitution between the particle and the bar at point E is known to be e . Furthermore, the contact surface between B and point E is smooth.

Find: Determine the angular velocity of the bar immediately after being impacted by the particle.



Use the following parameters in your analysis: $L = 3$ m, $d = 2$ m, $m = 10$ kg, $M = 15$ kg, $e = 0.6$, $\theta = 60^\circ$ and $v_{B1} = 20$ m/s.