

Closed book. No calculators are to be used for this quiz.

Quiz duration: 10 minutes

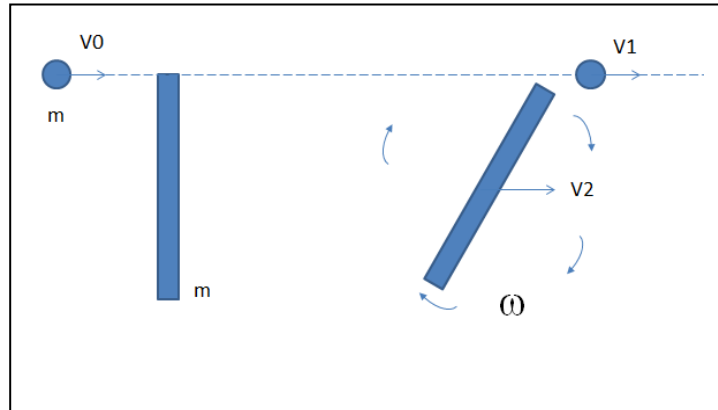
Name:

Student ID:

Signature:

A projectile of mass m moves to the right with a speed of V_0 . The projectile collides to the end of a stationary rod of mass m elastically. The length of the rod is L . The moment of inertia of the rod about the center of mass is $(mL^2/12)$

Calculate the angular speed of the rod ω and the center of the mass velocities of the rod and the projectile (V_1 and V_2) after the collision?



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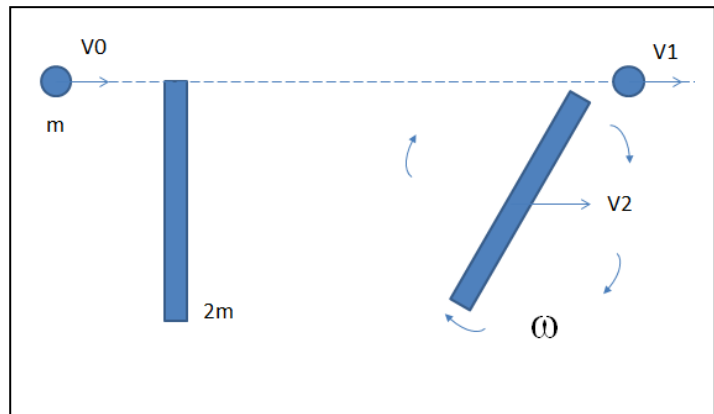
Name:

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Signature:

A projectile of mass $2m$ moves to the right with a speed of V_0 . The projectile collides to the end of a stationary rod of mass m elastically. The length of the rod is L . The moment of inertia of the rod about the center of mass is $(mL^2/12)$

Calculate the angular speed of the rod ω and the center of the mass velocities of the rod and the projectile (V_1 and V_2) after the collision?



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A projectile of mass m moves to the right with a speed of $\mathbf{V_0}$. The projectile collides to the end of a stationary rod of mass $3m$ elastically. The length of the rod is L . The moment of inertia of the rod about the center of mass is $(mL^2/12)$

Calculate the angular speed of the rod ω and the center of the mass velocities of the rod and the projectile ($\mathbf{V_1}$ and $\mathbf{V_2}$) after the collision?

