PHYS 101: General Physics 1 **KOÇ UNIVERSITY** **Spring Semester 2016**

College of Arts and Sciences

Section **Quiz 10-2** **May 2016**

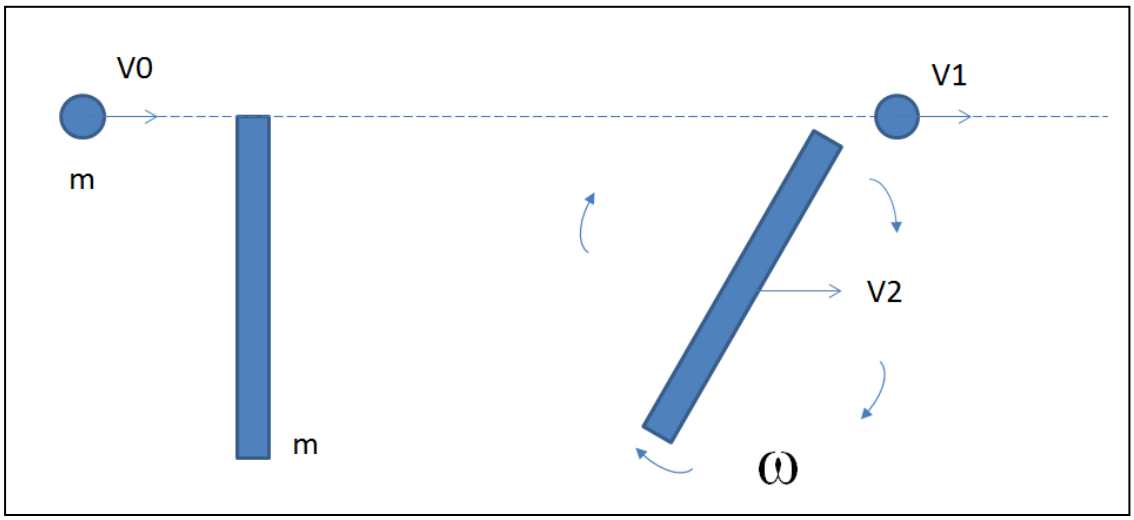
Closed book. No calculators are to be used for this quiz.

Quiz duration: 15 minutes

Name: **Student ID:** **Signature:**

A projectile of mass **m** moves to the right with a speed of **V0**. 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 (**V1** and **V2**) after the collision?



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Section **Quiz 10-2** **May 2016**

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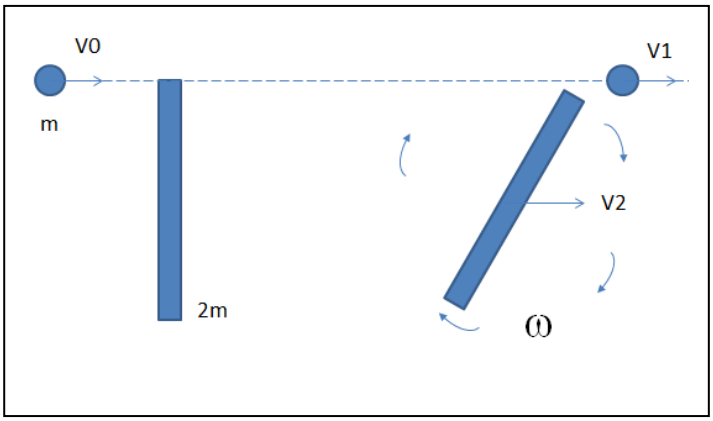
Quiz duration: 15 minutes

Name: **Student ID:** **Signature:**

A projectile of mass **2m** moves to the right with a speed of **V0**. 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 (**V1** and **V2**) after the collision?



PHYS 101: General Physics 1 **KOÇ UNIVERSITY** **Spring Semester 2016**

College of Arts and Sciences

Section **Quiz 10-3**

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

Quiz duration: 15 minutes

Name: **Student ID:** **Signature:**

A projectile of mass m moves to the right with a speed of **V0**. 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 (**V1** and **V2**) after the collision?