PHY1235: Physics for Engineers

Instruction

The objective of this problem set is to learn how to apply the conservation of energy on rigid bodies with translational and rotational motion.

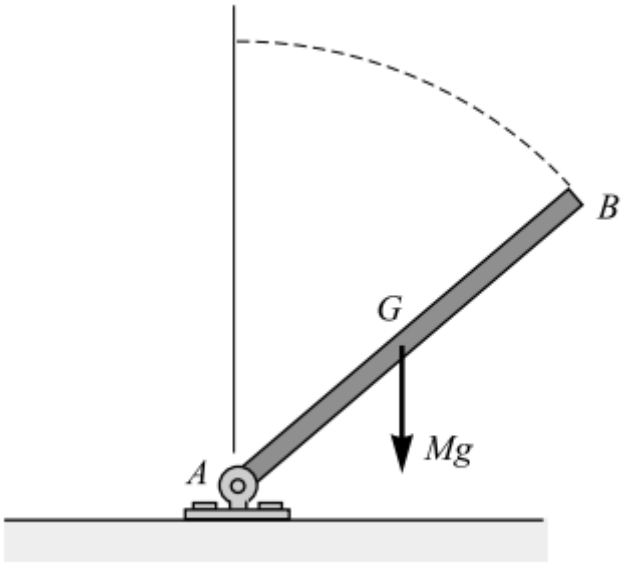
Issued: 04/07/2020 --- **Due:**

Helpful readings for this homework: Lecture #3; Chapter 10, section 10.4 of University Physics

Problem Set #3: Dynamics of Rotational Motion

Problem 1:

As shown in the figure below, a thin uniform rod AB of mass M and length L is hinged at end A to the level floor. It originally stands vertically. If allowed to fall to the floor as shown, with what angular speed will it strike the floor?



Expected Answers

Problem 1:

a) $\omega = \sqrt{\frac{3g}{L}}$