

DYNAMICS ASSIGNMENT

Planar Kinetics of a Rigid Body (Equation of Motion – Rotation)

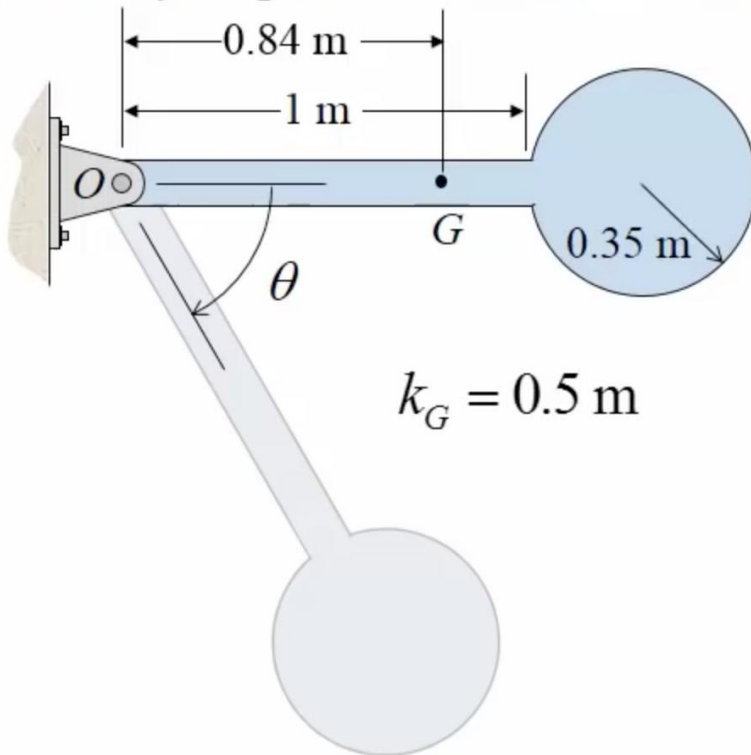
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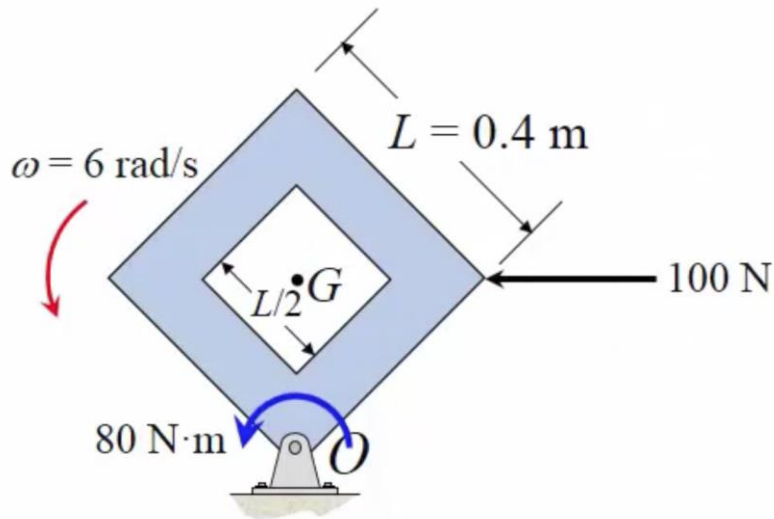
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Question 1 – Rotation



A composite pendulum is made of a uniform slender rod (12 kg) and a uniform disk (8 kg). If it is released from rest at the horizontal position, determine its angular velocity, angular acceleration and the support reaction at O when $\theta = 60^\circ$.

Question 2 – Rotation



A uniform thin hollow square plate is pinned at point O . If at this instant it is subjected to a horizontal force of 100 N and a couple moment of $80 \text{ N}\cdot\text{m}$ as shown, determine its angular acceleration.