

Rotational Dynamics

Quantities

Concept	Linear/Translational Quantity	Angular/Rotational Quantity	“Bridge”
cause of acceleration			
	units:	units:	
inertia			
	units:	units:	

Moment of Inertia for Extended Objects



Practice

1. Consider the following situation:

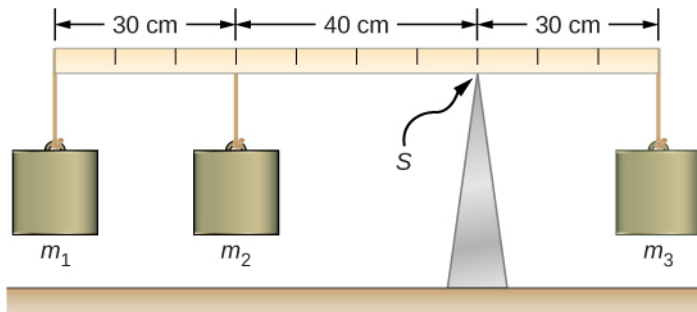


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- (a) Calculate the net torque about point S if $m_1 = 10$ kg, $m_2 = 20$ kg, and $m_3 = 30$ kg.
- (b) If you took m_3 off, what mass could you replace it with such that the system would balance?
2. A torque of 1.20 mN is applied to a disk of mass 4.80 kg and radius 30 cm until it reaches a rotational speed of 10,300 rpm. Through how many revolutions does the disk rotate during this process?