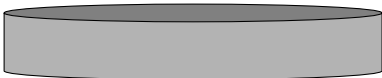
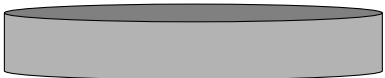


Angular Momentum

Quantities

Concept	Linear/Translational Quantity	Angular/Rotational Quantity	“Bridge”
momentum			
	units:	units:	



Period:

1. An ice skater is spinning with her arms extended. She has a moment of inertia of 4.1 kg m^2 and an initial angular velocity of 2.0 rad/s . She then pulls her arms in, reducing her moment of inertia to 1.5 kg m^2 .
 - (a) What is her new angular velocity after pulling her arms in?
 - (b) Calculate her initial and final rotational kinetic energy. Has her rotational kinetic energy increased or decreased? If so, explain why.
2. The bicycle wheel is essentially a hoop of mass 8 kg and radius 0.4 m . The turntable is essentially a disc of mass 5 kg and radius 0.5 m . The instructor is essentially a particle located at the center of the axis. If the bicycle wheel has an initial angular speed of 4.3 rad/s , what is the rate of rotation of the instructor and turntable after the wheel is flipped?