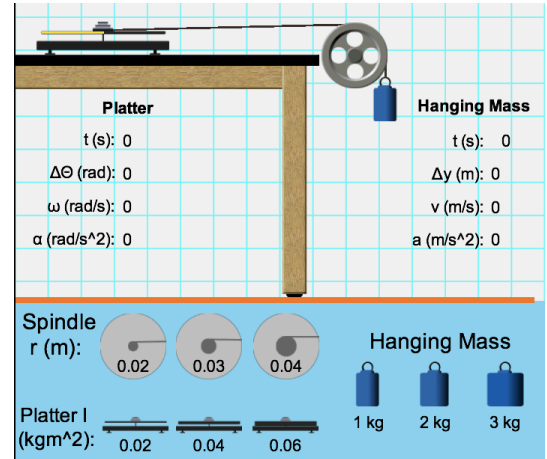


Gravitational-Rotational Energy Lab
AP Physics C

Name _____
1 2 3 4 5 6 7 8

1. Write a Conservation of Energy statement relating the total energy of the system before the mass is released to the total energy of the system after it has dropped a distance of Δy . Express your equation in terms of g , m , I , r , ω , and v .



2. Using the equation in part 1, predict the velocity (v) of the hanging mass after it has dropped a distance of 1.7 m. Does your prediction match the result displayed?

3. What happens to the maximum angular velocity (ω_{\max}) of the platter if you use a larger spindle diameter? Explain using conservation of energy.

4. What happens to the maximum angular velocity (ω_{\max}) of the platter if you use a platter with a larger moment of inertia? Explain using conservation of energy.

5. What happens to the maximum angular velocity (ω_{\max}) of the platter if you use a larger hanging mass? Explain using conservation of energy.