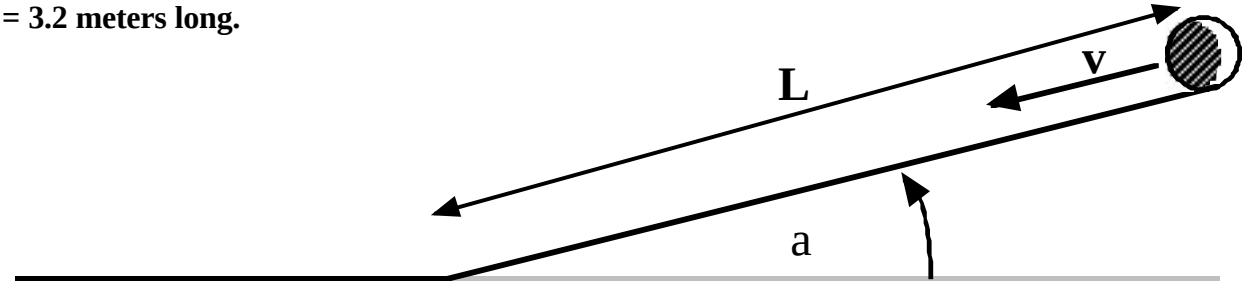
Name_____ **Period_____**

PHYSICS HOMEWORK QUIZ #15D **ROTATIONAL MOTION #2**

A ring, which has a mass of 3.80 kg and a radius of 26.5 cm., is sitting at rest at the top of an inclined plane. The ring is released, is allowed to roll to the bottom and then rolls onto a horizontal surface as shown below. The angle between the horizontal and the inclined plane is a **= 16.5^{o}.and the incline is L = 3.2 meters long.**



1. What will be the **total** kinetic energy of this ring as it reaches the bottom of the incline? [3 pts]
2. What will be the **linear** velocity of the ring as it reaches the bottom of the incline ? [3 pts]
3. What will be the **angular acceleration** of the ring as it rolls down the incline ? [3 pts]
4. What will be the magnitude of the **torque** exerted on the ring as it rolls down the incline ? [3 pts]
5. **How long** will it take for the ring to reach the bottom of the incline ? [3 pts]