

All questions must be answered using the information provided in lecture 11, Moment of inertia, Angular momentum and gravity.

1. Write the equation definition of moment of inertia.
2. Moment of inertia is an object's resistance to a change in its _____.
3. Angular velocity, ω , is the rate at which an object is _____.
4. Moment of inertia is a system's _____ to a change in its angular velocity.
5. What happens to the moment of inertia of an object, if the masses are moved out away from the center of rotation? _____
6. The grinding wheel has a large moment of inertia because it has a large _____ and a large _____.
7. Write the equation that defines angular momentum.
8. The angular momentum of a system is _____
9. The only way to change the angular momentum of a system is to apply an _____.
10. What happens to the angular velocity ω of a system when its moment of inertia I decreases?

11. Unless an unbalanced torque is applied to an object, the total angular momentum of a system will be _____.
12. The disk and hoop have the same mass and same diameter. Which one has a larger moment of inertia? _____
13. Write down the equation for Newton's law of gravity.
14. Is gravity a fundamentally large force or a fundamentally small force. Circle the correct answer.