

1. After turning off a DVD player, the 12.0cm diameter 10.0g disc slows from 27.5rad/s to a stop in 7.20s. Find (a)its rotational inertia, (b)its initial angular momentum and (c)the magnitude of the frictional torque bringing it to rest.



2. You watch a crop duster fly her 750kg plane at 110km/h horizontally over a field at a height of 25.0m. Find the angular momentum of the plane when it is (a)directly overhead and (b)when in is 100m in front of you.



3. A thin stick of mass m and length ℓ is rotating at a constant angular speed ω about one end. (a)Find the angular momentum of a small piece of the stick of mass dm at a distance r from the end. (b)Use this result to find the total angular momentum of the stick. (c)Explain why you know you have the correct answer.



4. (a)Find angular momentum of Earth due to its orbit about the sun. (b)Find the angular momentum of Earth about its center due to its rotation. Assume Earth is a solid sphere.