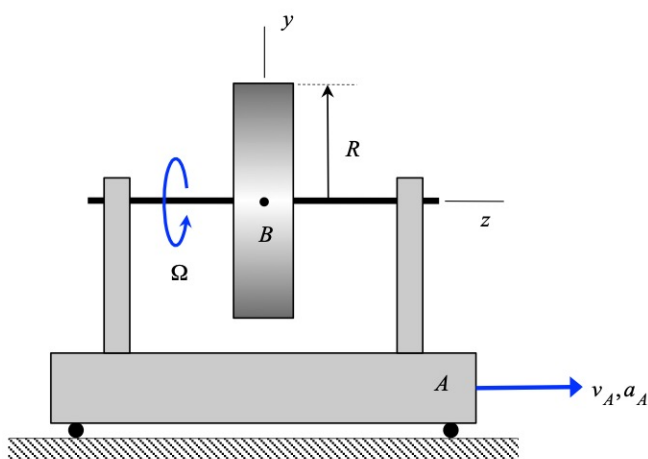


Homework H.2.B

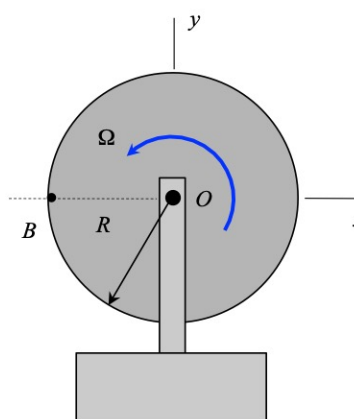
Given: A disk, having an outer radius of R , rotates with a rate of Ω about a shaft passing through its center O , with Ω increasing at a rate of $\dot{\Omega}$. The shaft is supported by a pair of bearings on cart A. Cart A is moving to the right with a speed of v_A and an acceleration of a_A . At the instant of interest, point B on the perimeter of the disk is at the same height as O .

Find: For this problem:

- Determine the velocity of point B. Write your answer as a vector in terms of its xyz components.
- Determine the acceleration of point B. Write your answer as a vector in terms of its xyz components.



SIDE view



RIGHT END view of disk