Homework 2.D

Given: A disk having an outer radius of R is rolling to the right with its center having a constant speed of v_O. Block B is connected by pin joints to the disk through bar AB. At the instant shown, bar AB is horizontal, and A is directly above the center of the disk O.

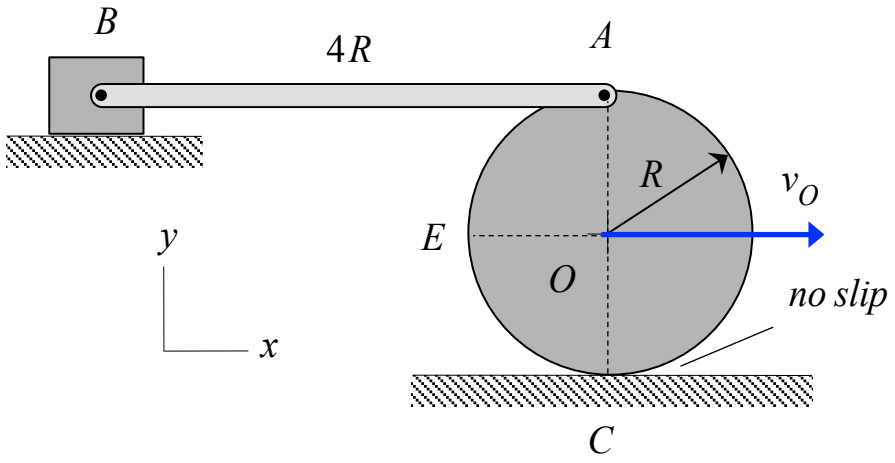
Find: For this instant in time:

(a) Determine the angular velocity and angular acceleration of the disk.

(b) Determine the angular velocity and angular acceleration of bar AB.

(c) Determine the velocity and acceleration of point E, where E is directly to the left of O.

Write your answers as vectors.



Write your answers in terms of, at most: R and v_O.