

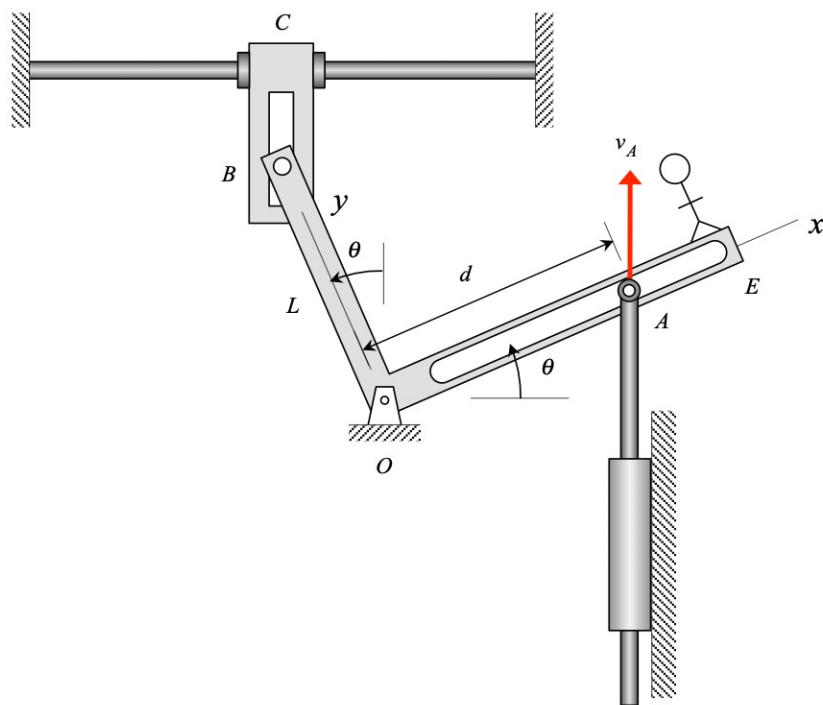
Homework H.3.D

Given: A guide rod is able to control the angular position of the L-shaped arm BOE through its end A moving vertically and through the slot cut into section OE of the arm. In turn, arm BOE controls the horizontal position of slider C through end B being constrained to move within the slot in slider C. For a particular task of this mechanism, end A of the guide rod is moving upward with a constant speed v_A . Our goal is to determine the velocity and acceleration of slider C.

Find: For this problem:

- Determine the angular velocity and angular acceleration of arm BOE.
- Determine the velocity and acceleration of pin B on BOE.
- Determine the velocity and acceleration of slider C.

HINT: Consider using an observer attached to the slotted arm BOE.



Use the following parameters in your analysis: $v_A = 20$ ft/s, $\theta = 30^\circ$, $L = 2$ ft and $d = 1.5$ ft.