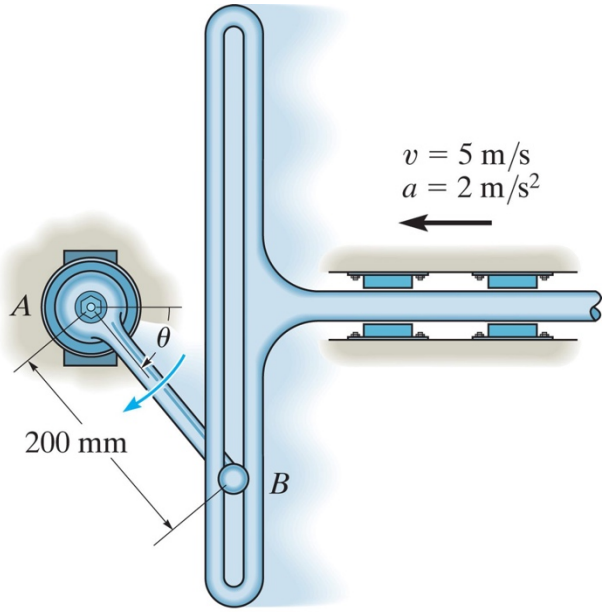
Submit your complete solution via MyCourses by Monday Dec 7, 23.59.

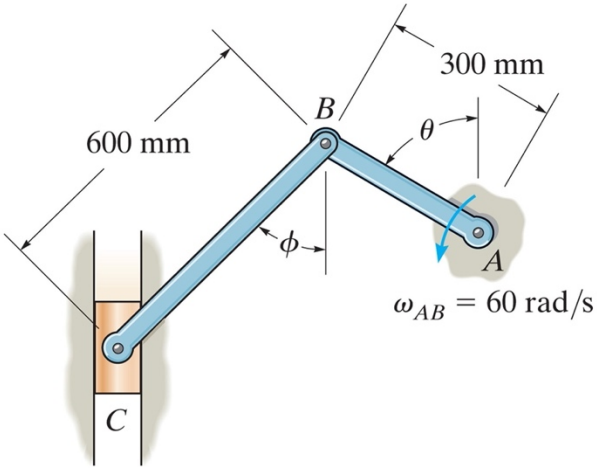
Exercise 1

At the instant $\theta = 60°$, the slotted guide rod is moving to the left with an acceleration of 2 m/s and a velocity of 5 m/s. Determine the angular acceleration and angular velocity of link *AB* at this instant.



Exercise 2

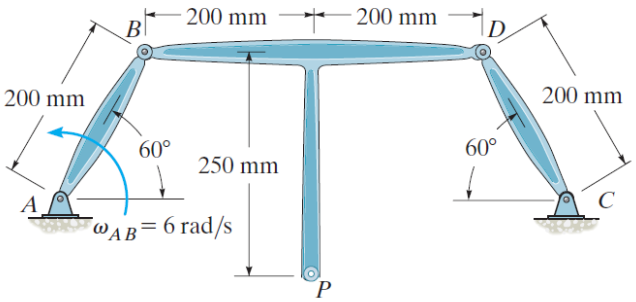
Rod *AB* is rotating with an angular velocity of $\omega_{AB} = 60$ rad/s. Determine the velocity of the slider *C* at the instant $\theta = 60°$ and $\phi = 45°$.



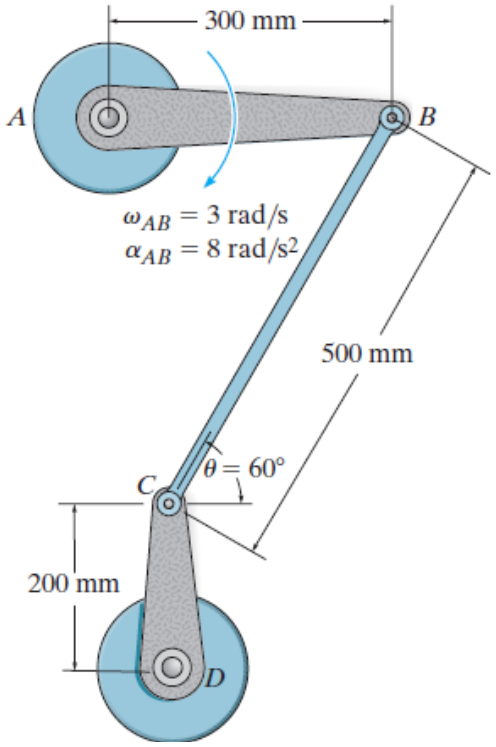
Exercise 3

Member *AB* is rotating at $\omega_{AB} = 6$ rad/s. Determine the velocity of point *P*, and the angular velocity of member *BPD*.

Answer: $\omega_{BPD} = 3$ rad/s; $v_P = 1.79$ m/s



Exercise 4
If member *AB* has the angular motion shown, determine the velocity and acceleration of point *C* at the instant shown.



Exercise 5
A force of $F = 10$ N is applied to the 10-kg ring as shown. If slipping does not occur, determine the ring's initial angular acceleration, and the acceleration of its mass center *G*. Neglect the thickness of the ring.

Answer: $\alpha = 0.560$ rad/s^2; $a_G = 0.224$ m/s^2