

Rigid Body Kinematics IV – Problem 3

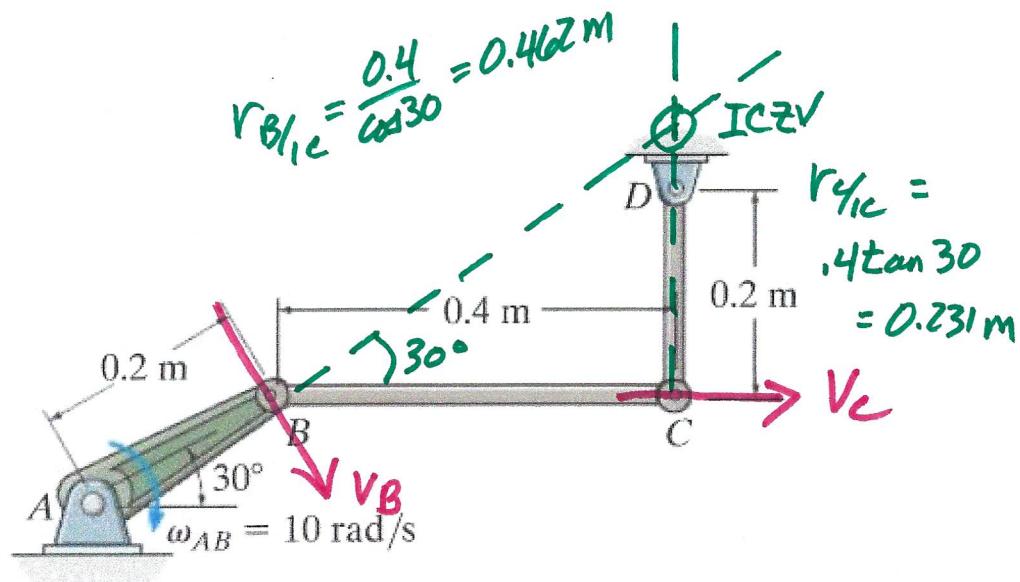
Determine the angular velocity of links BC and CD at the instant shown.

CLASSIFY MOTION

AB RAFA

BC GPM

CD RAFA



$$V_B = \omega_{AB} r_{AB} = 10(0.2) = 2 \text{ m/s}$$

$$V_B = \omega_{BC} r_{B/IC} \Rightarrow 2 = \omega_{BC} (0.462) \quad \underline{\omega_{BC} = 4.33 \text{ rps}} \uparrow$$

$$V_C = \omega_{BC} r_{C/IC} = 4.33(0.231) = 1.0 \text{ m/s} \rightarrow$$

$$V_C = \omega_{CD} r_{CD} \Rightarrow 1 = \omega_{CD} (0.2) \quad \underline{\omega_{CD} = 5 \text{ rps}} \uparrow$$