

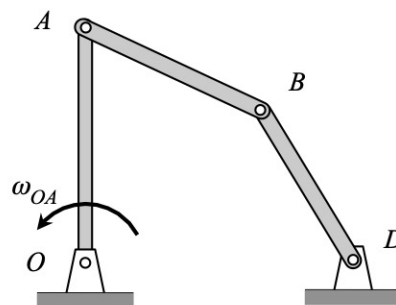
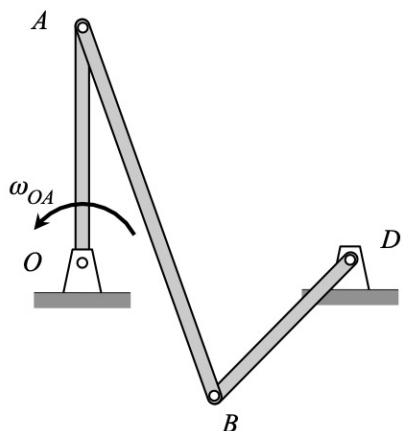
**Homework H.2.H**

This problem has three parts. In each part, you are asked to use the instant center approach in answering the questions related to the problems. In all cases, the figures are drawn to scale. Please use a straight edge when making your drawings.

**PART A**

In the mechanisms shown below, link OA is rotating in the counterclockwise sense. For the position shown of EACH mechanism:

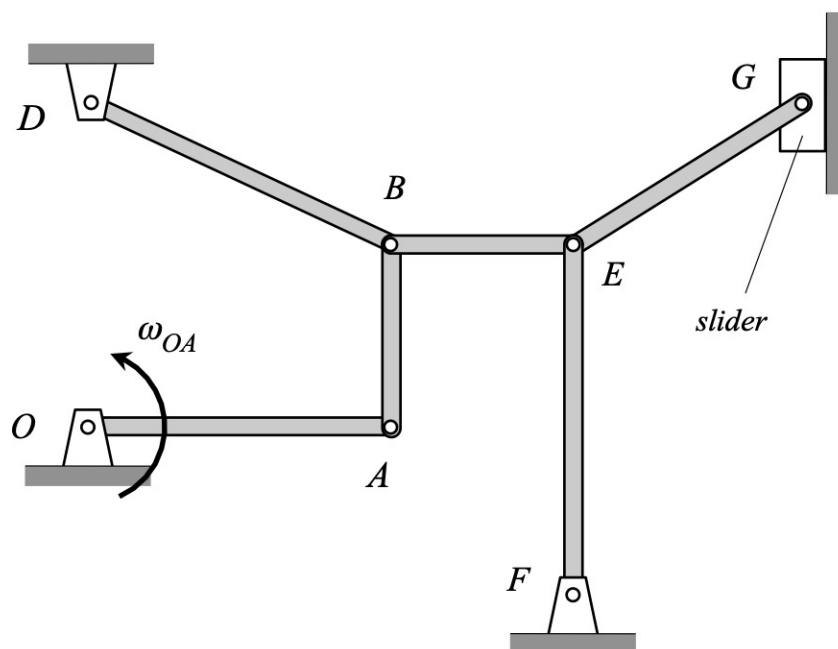
- Determine the location of the instant center for link AB.
- Determine the directions of rotation for links AB and BD. Justify your answers in words.
- Which is larger:  $|\omega_{OA}|$  or  $|\omega_{AB}|$ ? Justify your answers in words.



PART B

In the mechanism shown below, link OA is rotating in the counterclockwise sense.

- (a) Determine the locations of the instant centers for links AB, BE and EG.
- (b) Determine the directions of rotation for links AB, BE and EG. Justify your answers in words.



## PART C

Link AB, having a length of  $L = 5$  in, is part of a planar mechanism. At the instant shown, the velocities of points A and B are known to be both perpendicular to a line connecting A and B, with  $v_B = 3v_A = 30$  in/s. Determine the location of the instant center for link AB.

