DYNAMICS ASSIGNMENT

Planar Kinematics of a Rigid Body (Translation and Rotation)
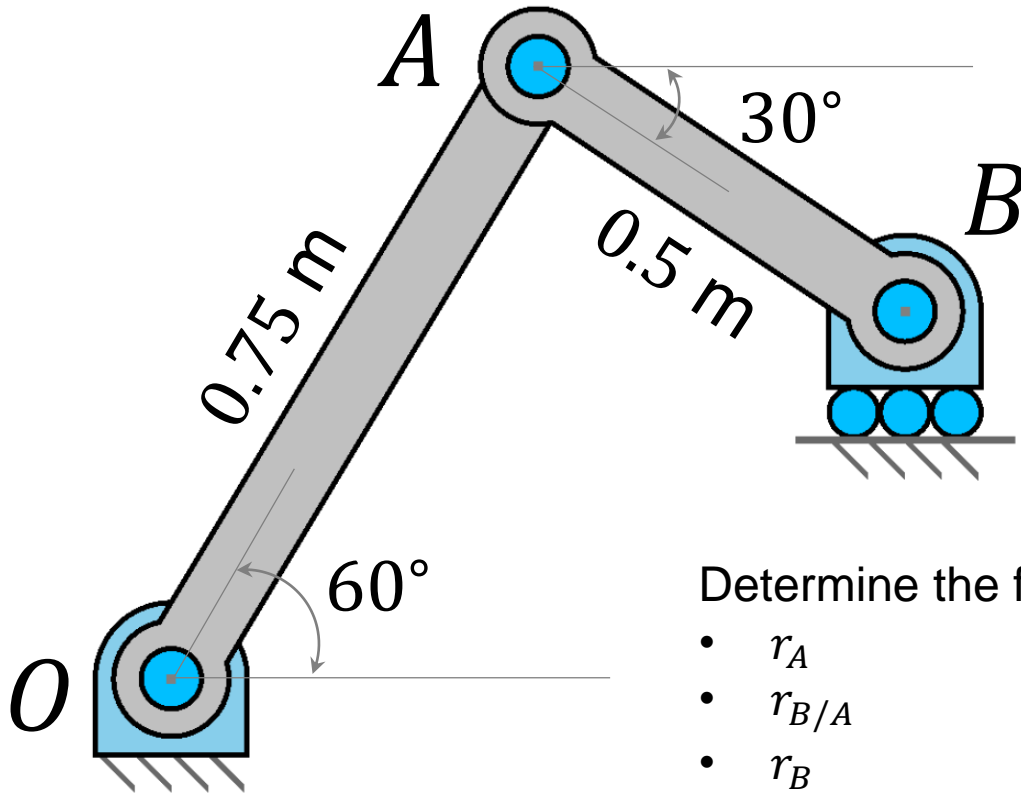
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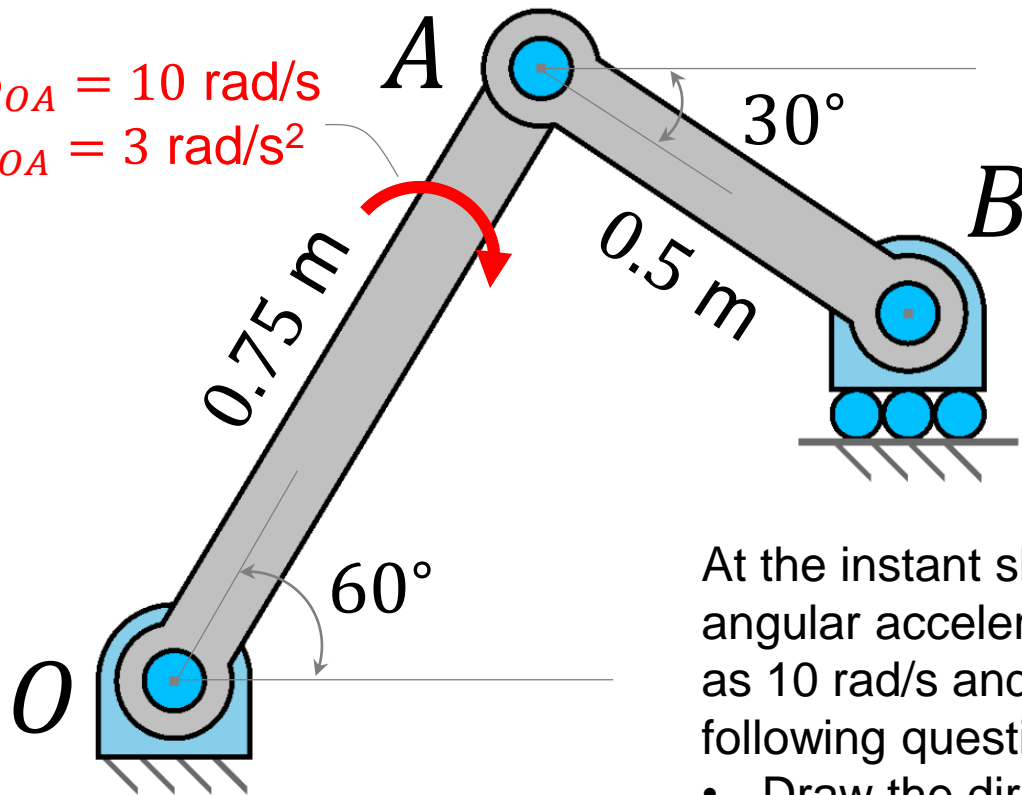
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Determine the following position vector:

- r_A
- $r_{B/A}$
- r_B

ω_{OA} = 10 rad/s
α_{OA} = 3 rad/s²

A

30°

B

0.75 m

0.5 m

60°

O

At the instant shown, the angular velocity, ω_{OA} and angular acceleration, α_{OA} of the arm *OA* are given as 10 rad/s and 3 rad/s², respectively. Answer the following questions:
- Draw the direction of the velocity of Point *A*.
- Calculate the velocity of Point *A* at this instant.
- Calculate the acceleration of Point *A* at this instant.