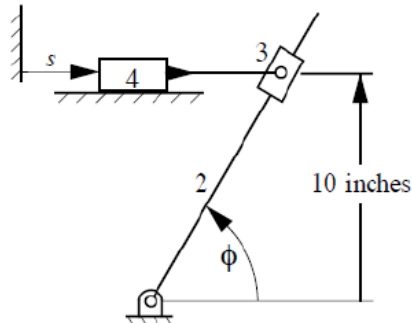


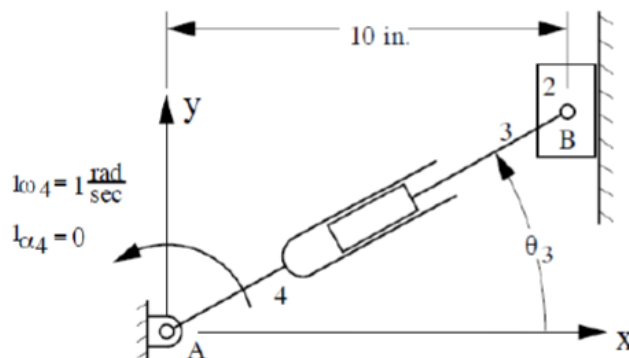
**Problem 5.3**

In the mechanism shown,  $\dot{s} = -10 \text{ in/s}$  and  $\ddot{s} = 0$  for the position corresponding to  $\phi = 60^\circ$ . Find  $\dot{\phi}$  and  $\ddot{\phi}$  for that position using the loop equation approach.



**Problem 5.8**

Use loop equations to determine the velocity and acceleration of point B on link 2 when  $\theta_3 = 30^\circ$ . Make point A the origin of your reference coordinate system.



**Problem 5.14**

For the mechanism in the position shown, the cam (link 2) rotates with an angular velocity of 200 rad/s. Write the vector loop equations for position, velocity, and acceleration and determine the angular velocity and acceleration of the follower (link 3). Use  $\phi = 60^\circ$  and neglect the follower thickness (i.e., assume that it is zero).

