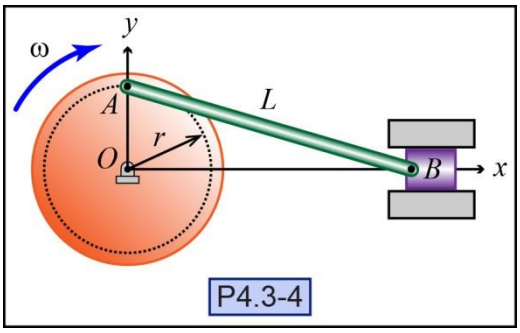
P4.3-4)[fe] The disk in the reciprocating piston mechanism rotates at 1000 rpm in the clockwise direction. The connecting rod AB converts the rotational motion of the disk to translation of the piston. The connecting rod attaches to the disk 1 ft from its center and the length of rod AB is 3 ft. Determine the velocity of the piston. Back up your answer with mathematical formulations.



P4.3-4

Given:

Find:

Solution:

Calculate the velocity of point A.

$\mathbf{v}_A$ = _____

Calculate the velocity of the piston.

Using the relative velocity equation to show that ω_{AB} is equal to zero.

What is the velocity of the piston?

$\mathbf{v}_B$ = _____