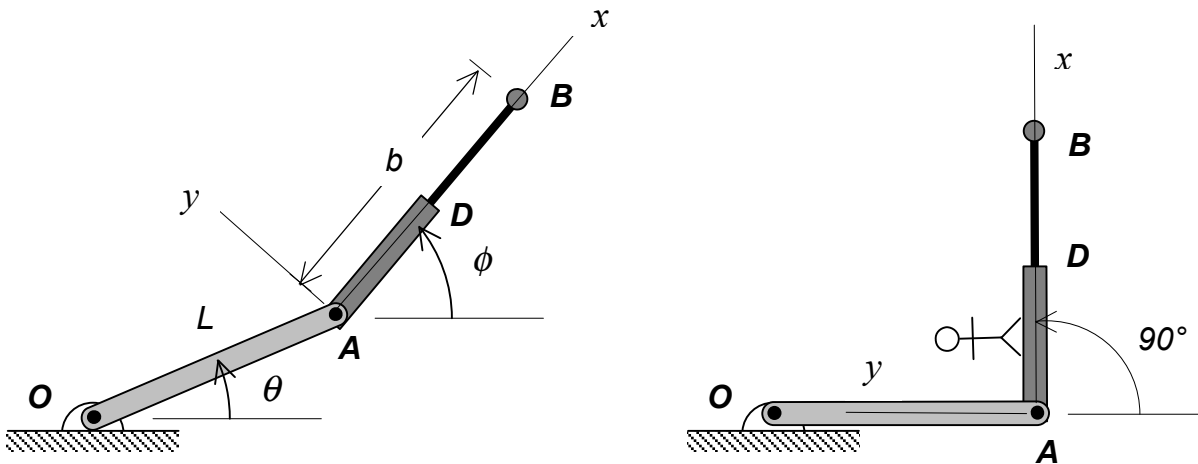


Homework H3.B

Given: A robotic manipulator is made up of two links OA and ADB as shown in the figure below left. Link OA has a fixed length of L , and the length link ADB is changing at a constant rate of \dot{b} .

Find: For the position shown below right with $\theta = 0^\circ$ and $\phi = 90^\circ$, determine the acceleration of point B on the manipulator.



Use the following parameters in your analysis: $b = 3 \text{ ft}$, $\dot{b} = 6 \text{ ft/s} = \text{constant}$, $\dot{\theta} = 2 \text{ rad/s} = \text{constant}$, $\dot{\phi} = 3 \text{ rad/s} = \text{constant}$ and $L = 4 \text{ ft}$.