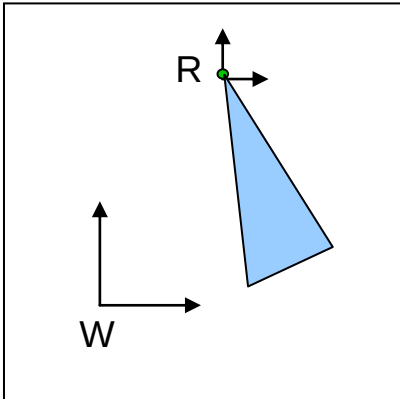


Robot Motion Planning Worksheet



A. Degrees of freedom: Triangular robot

a. if robot is purely translational (cannot rotate)

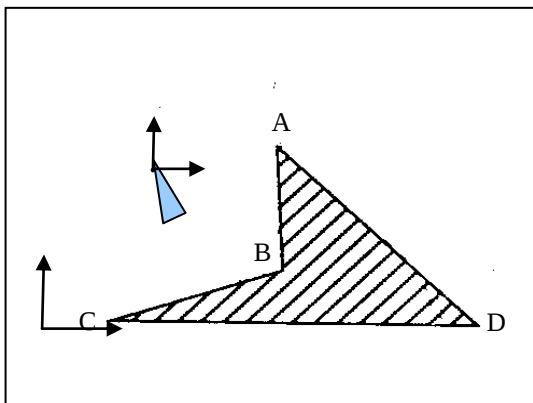
of DOFs :

configuration parameters :

b. If robot can rotate

of DOFs :

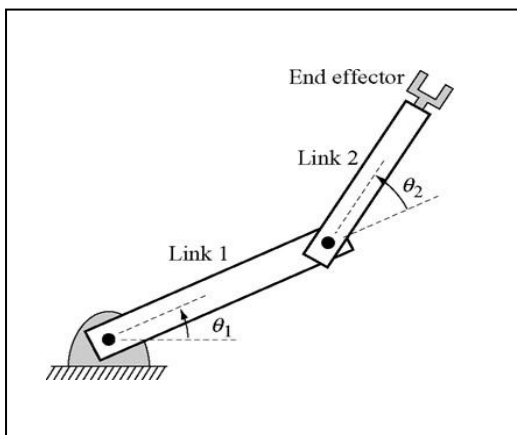
configuration parameters :



B. Draw the C-space for the obstacle B given that the robot can only translate.

C. Sketch the roadmap considering the sites as the 4 edges of the obstacle ABCD+ 4 edges of the walls 1234.

D. Exercise : What happens to the C-space map of B (Q_B) if the triangle can also rotate?



E. how many parameters needed to fix the robot pose in this 2-DOF planar arm ?

What may be one assignment for the configuration parameters?

F. Assume $L_1=L_2=10$. Draw the C-space for a point obstacle at (5,12)