

exercise 7.1 Find IK, FK, end-effector singularity and actuator singularity with $a_1 = (-|a_1|, 0)$, $a_2 = (0, |a_2|)$, $a_3 = (|a_3|, 0)$, and the linear forces $f_i = \tau_i \hat{n}_i$ with $\hat{n}_1 = (0, 1)$, $\hat{n}_2 = (0, -1)$, $\hat{n}_3 = (0, 1)$?

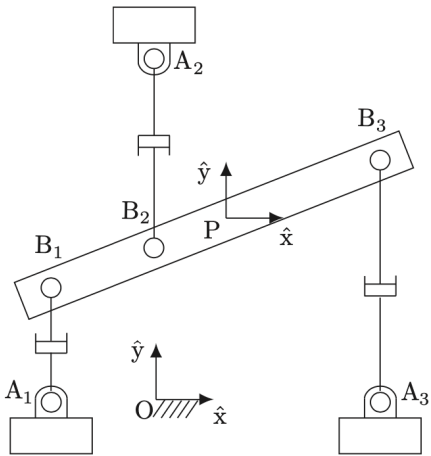


Figure 7.10: 3×RPR planar parallel mechanism.

exercise 7.3 Find IK, and the number of IK, where all the links are the same as L ?

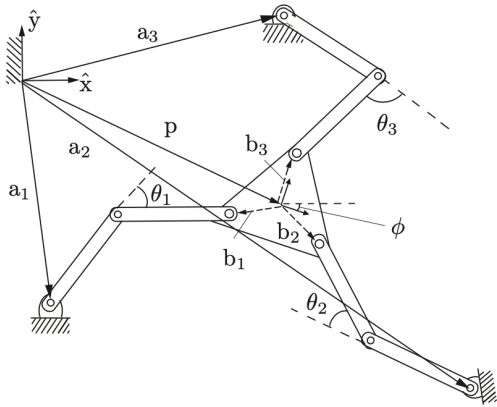


Figure 7.12: 3×RRR planar parallel mechanism.

exercise 7.4 Find IK and FK Jacobian J_a from $\mathcal{V}_s = J_a \dot{q}_a$ when A, B, D are actuated, i.e, $\dot{q}_a = (\dot{\theta}_1, \dot{\theta}_2, \dot{\psi}_1)$, where $a_1 = (3, 0)$, $a_2 = (4, 3)$ in $\{s\}$ and $b_1 = (1, -1)$, $b_2 = (1, 1)$ in $\{b\}$.

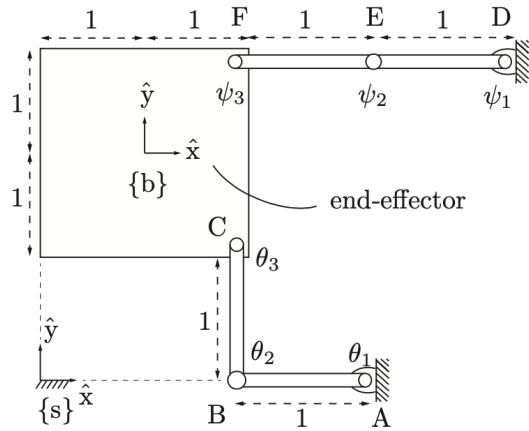


Figure 7.13: A six-bar-linkage.