ME 115(b): Homework #1

(Due Tuesday Apr. 16, 2002)

Problem #1: (elbow manipulator)

- Compute the hybrid Jacobian for the 3-degree-of-freedom Elbow manipulator. Specifically, compute the relationship between the joint angle velocities and the translational velocity of the tool frame origin.
- Find the singularities of this manipulator.
- Sketch the geometry of these singularities.

Problem #2: Do Problem 13(a) in Chapt. 3 of MLS.

Problem #3: Do Problem 16 in Chapt. 3 of MLS.

Problem #3: Do Problem 20 in Chapt. 3 of MLS.