

ME 449 Robotic Manipulation
Spring 2014
Problem Set 4
Due Wednesday May 21 at beginning of class

1. Chapter 9 exercise 1.
2. Chapter 9 exercise 2.
3. Chapter 9 exercise 21.
4. Chapter 9 exercise 22.
5. Chapter 9 exercise 23.
6. Chapter 9 exercise 25. Plot the motion cones at grid points spaced every 0.2 in the s direction (from 0 to 1) and every 0.2 (s parameter units)/s in the \dot{s} direction (from 0 to 1). The maximum torque at joint 1 is 2 Nm and at joint 2 is 1 Nm. The damping coefficient b at each joint is zero. Gravity is zero (horizontal plane). The length of link 1 L_1 is 1 m and link 2 L_2 is 0.5 m, and the point masses m_1 and m_2 at the end of each link are 1 kg and 0.5 kg, respectively. Turn in your analysis, your plot, and your commented, clearly structured code. (Ease of understanding your code will be part of the evaluation!)