1. Consider the 3D elbow below. Assume the big cylinders (joints) in the diagram are all identical with uniform mass distribution, diameter 20cm, height 40cm, and mass 1Kg. Assume the smaller cylinders (links) are all identical with uniform mass distribution, diameter 10cm, length 40cm, and mass 0.5Kg. Assume all the joints are direct-drive. Find the equation of motion of the robot.

2. Find the equation of motion of the two-link planar arm as shown below: