Revision – Robotics

1) Determine PEAS and ODESA for Part-picking robot

http://www.el-dosuky.com/teach/robo_14/lecs/01/1-Introduction-to-Robotics.pdf

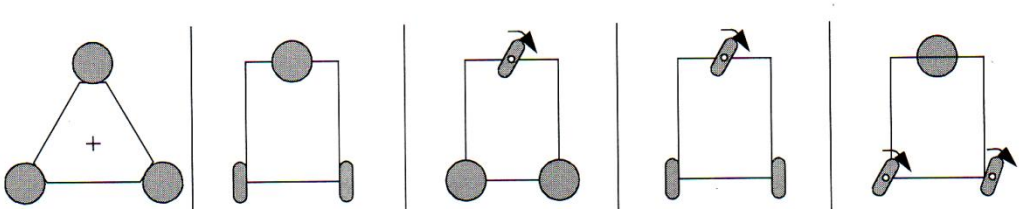
3) List Classification of Sensors

http://www.el-dosuky.com/teach/robo_14/lecs/03/sensor.pdf Page 12

4) List Wheel Types

http://www.el-dosuky.com/teach/robo_14/lecs/04/Mobile-Robot.pdf page 10

5) Calculate Degree of Maneuverability

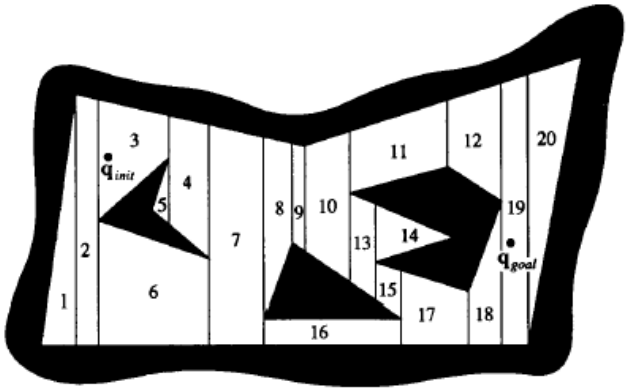


http://www.el-dosuky.com/teach/robo_14/lecs/04/Mobile-Robot.pdf page 16

6) List the five types of driving (steering) methods

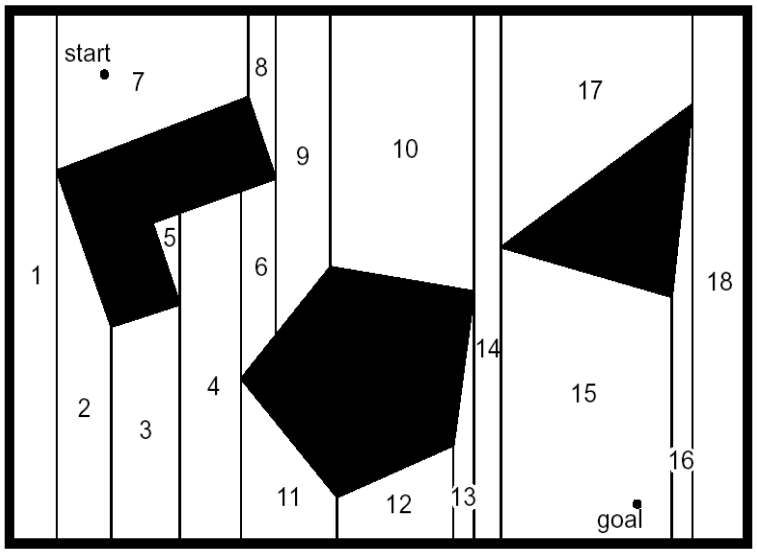
http://www.el-dosuky.com/teach/robo_14/lecs/04/Mobile-Robot.pdf page 29

7) Find the path using Trapezoidal Decomposition:



http://www.el-dosuky.com/teach/robo_14/lecs/07/motion-planning.pdf pages 17,18,19

8) Find the path using Trapezoidal Decomposition:



10) List Motion Planning Methods

http://www.el-dosuky.com/teach/robo_14/lecs/07/motion-planning.pdf page 25

11) Draw Control Cycle of Autonomous Robots

http://www.el-dosuky.com/teach/robo_14/lecs/08/localization.pdf page 2

12) Compare between Behavior Based Navigation and Model Based Navigation

http://www.el-dosuky.com/teach/robo_14/lecs/08/localization.pdf pages 4,5

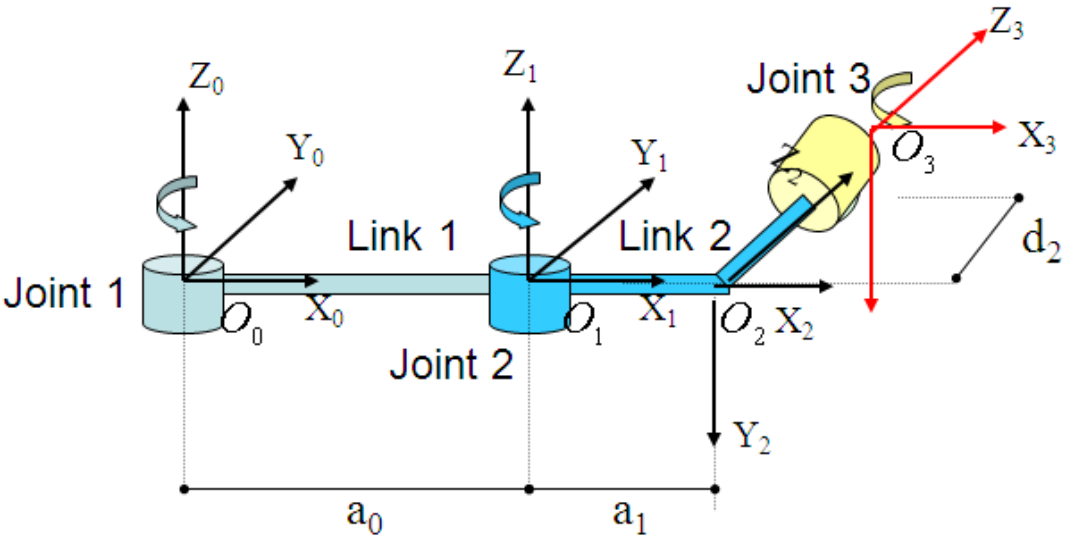
13) List and draw Robot Arm Configurations

http://www.el-dosuky.com/teach/robo_14/lecs/10/kinematics.pdf page 3

14) How to get the resultant rotation matrix for Yaw, Pitch, Roll?

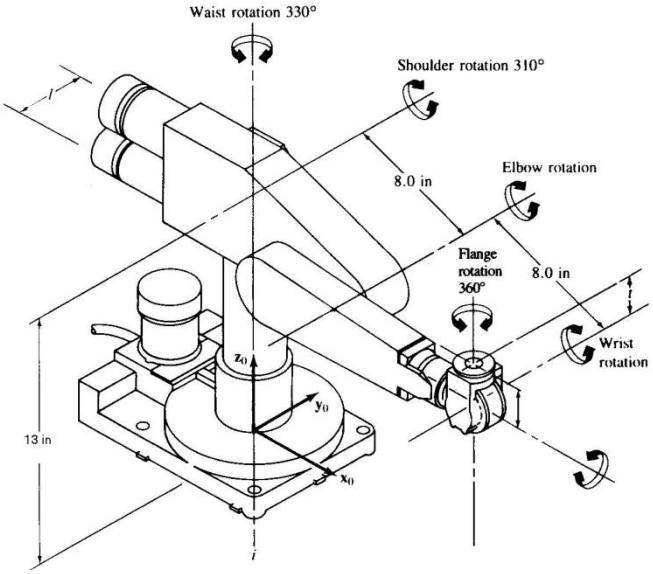
http://www.el-dosuky.com/teach/robo_14/lecs/10/kinematics-II.pdf page 7

15) Determine Denavit-Hartenberg Link Parameter Table for the following robot



http://www.el-dosuky.com/teach/robo_14/lecs/10/kinematics-II.pdf page 15

16) Determine Denavit-Hartenberg Link Parameter Table for the following robot



http://www.el-dosuky.com/teach/robo_14/lecs/10/kinematics-II.pdf page 17

17) What are Control Blocks?

http://www.el-dosuky.com/teach/robo_14/lecs/12/control.pdf page 2

18) Draw PID controller

http://www.el-dosuky.com/teach/robo_14/lecs/12/control.pdf page 3

19) What are criteria of control?

http://www.el-dosuky.com/teach/robo_14/lecs/12/control.pdf page 5

20) Discuss the algorithm of Simulated Tom Thumb

simulated-tom-thumb-the-rule-of-thumb-for-autonomous-robots

21) Discuss the algorithm of Helen Keller Heuristic

helen-keller-heuristic-a-common-ground-scenario-for-human-robot-interaction