

Assignment no. 1

due: November 11th, 2019

The letter **(p)** after the exercise number indicates that this exercise has a programming component.

Exercise 1.1 (p) Write a program that solves Oskar's cube. The matrices that describe the faces of the cube will appear soon in the course's website, together with specifications how to output a solution path from start to goal.

Exercise 1.2 We are given a convex polygonal robot P with m vertices that is free to translate inside a convex polygonal room Q with n vertices. The only obstacles to the motion of P are Q 's walls. What is the maximum combinatorial complexity of the free space in this case? Describe an efficient algorithm to compute it.

Exercise 1.3 (p, optional) Implement a solution of Exercise 1.2.