

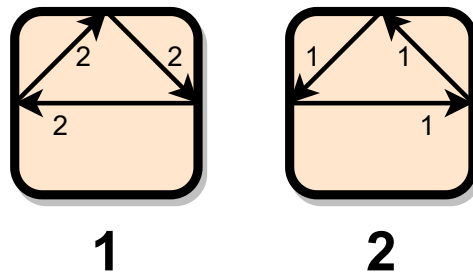
Problem Set 6

Due: Monday, October 23, 2023 at noon

Problem 6.1 [3-spinner hardness].

A *k*-**spinner** is a deterministic gadget with *k* locations and two states, 1 and 2. When the gadget is in state 1, the agent can enter at any location and exit at the *clockwise* next location, while switching the gadget to state 2. When the gadget is in state 2, the agent can enter at any location and exit at *counterclockwise* next location, while switching the gadget to state 1.

For example, here is the state diagram of a 3-spinner:



You can also see an example of a 4-spinner in action in this video: <https://youtu.be/QjfiRNrAmIo?t=1097>.
Prove PSPACE-completeness of reachability (one-player motion planning) with 3-spinners.

You must include a drawing or diagram in your submission.