

three-disk@3-
disk!symbolic
dynamics
symbolic
dynamics!3-disk

Chapter 9. World in a mirror

Solution 9.1: 3-disk fundamental domain symbolic dynamics. *Read*
sect. 1.4.

Solution 9.2: Reduction of 3-disk symbolic dynamics. *The answer is given in*
sect. 23.6. *Some remarks concerning part (c):*

If an orbit does not have any spatial symmetry, its length in the fundamental domain is equal to that in the full space. One fundamental domain orbit corresponds to six copies of the orbit in the full space related to each other by symmetries. If a periodic orbit does have a spatial symmetry, then its fundamental domain image is a fraction of that in the whole space, and the orbit (and its symmetry partners) in the full space is tiled by copies of the irreducible segment, corresponding to an orbit in the fundamental domain. The higher symmetry an orbit has, the shorter the irreducible segment.

Another way to construct a fundamental domain orbit: put a periodic orbit and all its spatial symmetry relatives simultaneously in the full space. The segments that fall into a fundamental domain constitute the orbit in the fundamental domain.

(Yueheng Lan)