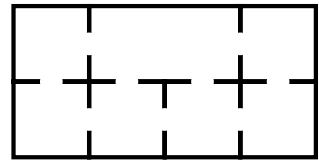
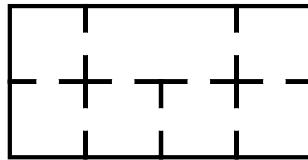
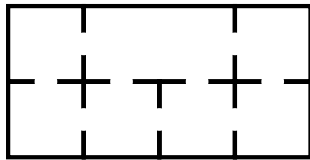
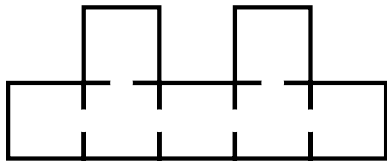


A dragon's tour of a floorplan walks through each door exactly once.

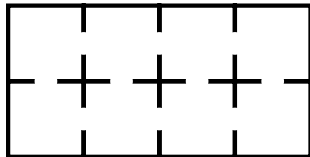
Here is a floorplan. Draw a dragon tour.



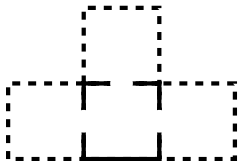
Here is a floorplan. Explain why there is no dragon tour.



Here is a floorplan. Explain why there is no dragon tour.



Here is part of a floorplan. Explain why no dragon tour can start and stop in the same room.



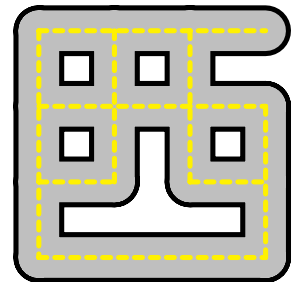
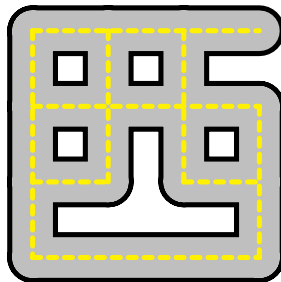
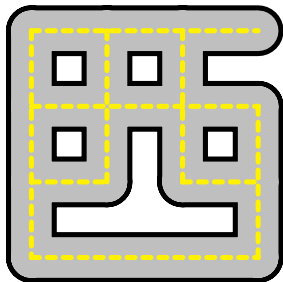
Draw a floorplan (or two or three) with a dragon tour that starts and stops in the same place.

Draw a floorplan with 7 rooms (counting the yard, if you have any exterior doors). Two of the rooms should have 3 doors, two of the rooms should have 4 doors, two should have 1 door, and one should have two doors.

Why is it impossible to draw a floorplan with 7 rooms (counting the yard, if you have any exterior doors) if we require that two rooms have 4 doors, two rooms have 3 doors, two rooms have 2 doors, and one room has 1 door.

A garbage route is a driving loop so that you drive down each side of the road (the right side both times, from your point of view) exactly once. You can make right turns, and left turns, and U-turns, but make sure to end up on the right side of the road.

Here is a neighborhood. Find a garbage route. Extra credit for only one u-turn.



Here is another neighborhood. What is the fewest number of u-turns?

