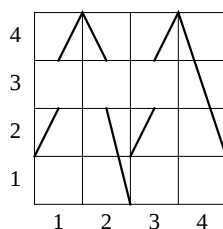


Seventh homework set

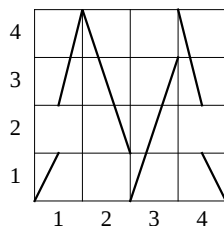
Due at the beginning of class on Thursday, Nov 19. No late homework will be accepted.

Fold your homework paper vertically and PRINT your name on the outside.

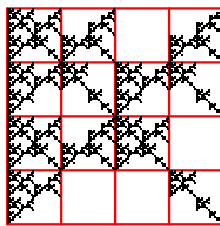
1. How many 4-cycles does the $s = 2$ tent map have? (Hint: start by counting the fixed points of T^4 .) Are these 4-cycles stable or unstable? Explain your reasoning, don't just give the answer.
2. In this graph, the bold lines are the function to be iterated. For reference, the bins 1, 2, 3, and 4 are shown on both the x and y -axes.



- (a) List the allowed bin to bin transitions.
 - (b) Draw the transition graph for the IFS driven by iterating this function.
 - (c) Find the dimension of the fractal generated by this driven IFS. (Hint: look at the transition graph and think.)
3. Which of these driven IFS, (a) or (b), is produced by the iterates of the function graphed on the left? Give reasons for your choice. Your explanation should include a list of the allowed and forbidden bin to bin transitions for the graph, and the empty length-2 addresses for both driven IFS.



(a)



(b)

