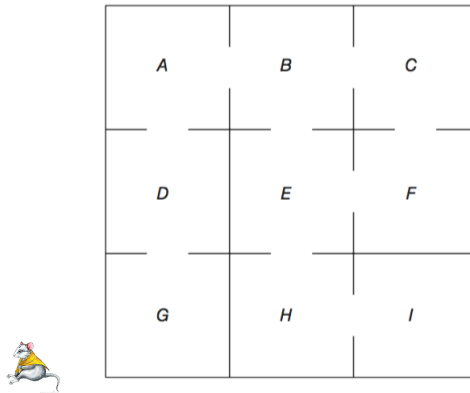


Math 339SP — More on absorption

The following problem gets us working with ideas related to absorption *and* time.

Problem 1. Like in our last worksheet, a mouse is placed in the maze below, starting in room *A*. The trap is placed in room *F* and the piece of cheese is placed in room *I*. The nearest neighbor random walk dynamic from room to room remains. What is the expected number of times the mouse visits room *A* before it either finds the cheese or gets trapped? Room *B*? What is the expected number steps (ie. rooms visited, counting repetition) before the mouse either finds the cheese or gets trapped?



Problem 2. A biased coin with heads probability $2/3$ is repeatedly flipped. Find the expected number of flips made until the pattern HTHTH first appears.