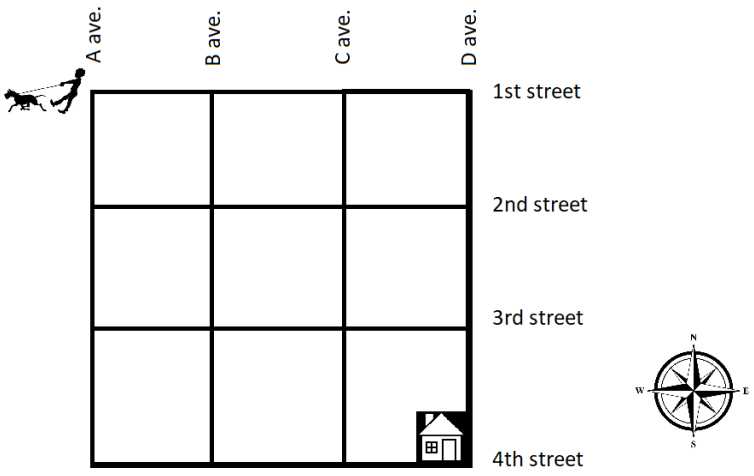
Week #5 Fall 2022

Problem of the Week



Steven lives on the corner of 4th street and D avenue, but he is currently walking his dog and at the corner of 1st street and A avenue. At the moment he is trying to get home before his friend Tina gets to his house. As he walks towards home he will use probability to determine which way to go at each intersection. 25% of the time he will head East, and 75% of the time he will head South. He will do this until he reaches D avenue or 4th street (once he reaches either he will head straight home). Tina has actually arrived at Steven's home at the same time that Steven starts heading back. She wants to surprise him and plans to walk towards the corner of 1st street and A avenue. She will choose North 20% of the time and West 80% of the time until she gets to either 1st street or A avenue. What is the probability that they cross paths if they walk at the same speed?

Undergraduates may submit solutions to the Mathematics Department office, 1150 FAB **or** by email to waynepotw@gmail.com by noon 10/25/2022. Include your name, ID number, and whether you have completed Math 2030 (or higher). For more information go to https://clas.wayne.edu/math. Solutions will be posted online and throughout the math department after the deadline.