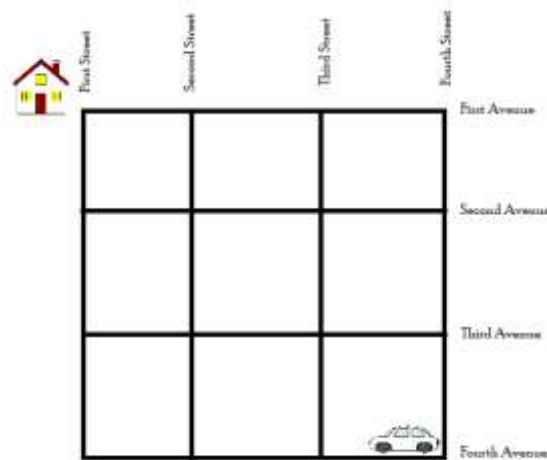


Week #3 Winter 2022

Problem of the Week



Eliza lives on the corner of First Street and First Avenue. When driving home one day she decides to take a more scenic route. Starting at the corner of Fourth Street and Fourth Avenue she decides to roll a 4-sided die to determine which way to go. If she rolls a 1, she will head north. If she rolls a 2, she will head east. If she rolls a 3, she will head south. If she rolls a 4, she will head west. After driving one block, she will do the same thing at the next corner. She plans to continue this until she gets home (at the corner of First Street and First Avenue). What is the probability that she gets home and the following takes place during her trip:

1. She never arrives at the same corner twice.
2. She never goes north of First Avenue.
3. She never goes east of Fourth Street.
4. She never goes south of Fourth Avenue.
5. She never goes west of First Street.

Undergraduates may submit solutions to the Mathematics Department office, 1150 FAB **or** by email to waynepotw@gmail.com by noon 3/1/2022. 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.