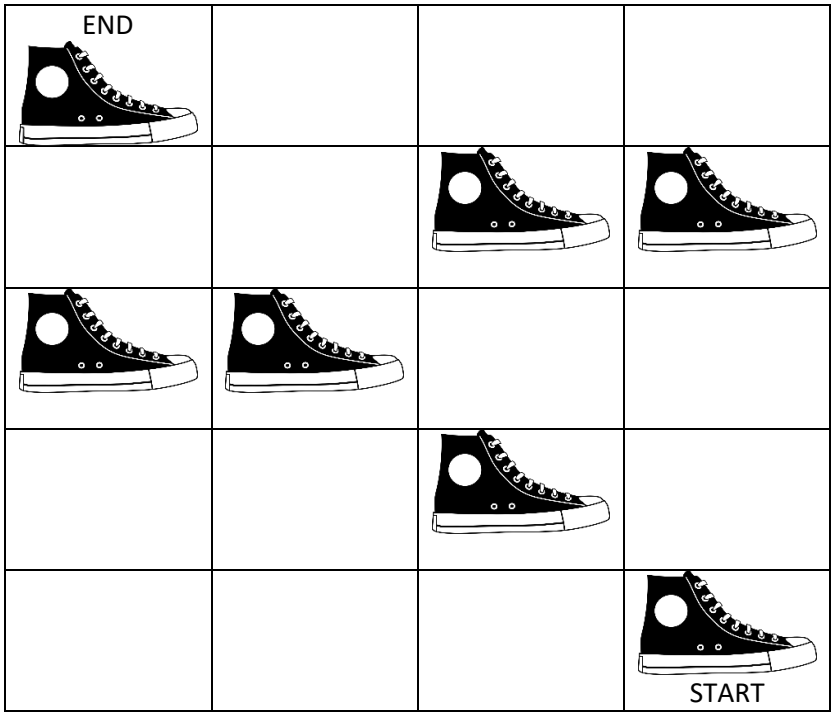
Name: __Julia Nelson_____ Date: ___April 17, 2020___

Pledge: __"I pledge my honor that I have abided by the Stevens Honor System."__

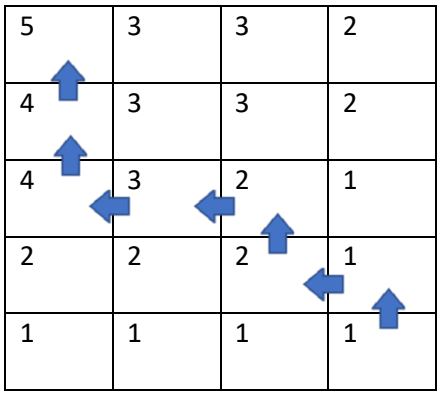
Professor Evil is at it again! He wishes to step on the students in his class who have made mistakes. The students are sitting in a grid, as seen below, and the ones who have made mistakes are marked with the sneaker icon. Professor Evil wants to step on as many students as he can on his way out of the classroom for the day. He will start in the **bottom, right** corner and will walk either **up** or **left** until he reaches the door of the classroom which is in the **top, left** corner. Professor Evil wants you to apply your knowledge of dynamic programming on this problem. If you make mistakes on this quiz, the shoe icon might appear over your name on the seating chart!



1) Fill in the **entire** table below with the correct values tracking the amount of students Professor Evil could potentially step on. (5 points, -1 for each incorrect value up to -5)

5	3	3	2
4	3	3	2
4	3	2	1
2	2	2	1
1	1	1	1

2) Trace the path that Professor Evil must take to maximize the number of students he steps on. (1 point)



3) Assuming there are **R** rows and **C** columns, what is the complexity of

   a. Populating the table in Question 1? (2 points)

   ___*theta*(R*C) → *theta*(5*4)___

   b. Backtracking over the table to determine the path Professor Evil takes? (2 points)

   __*theta*(R+C) → *theta*(5+4)_