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Homework 2

1. The first 12 (r, c) coordinates to be popped off the stack are:

(3, 5)

(3, 6)

(3, 4)

(2, 4)

(1, 4)

(1, 3)

(1, 2)

(1, 1)

(2, 1)

(3, 3)

(4, 5)

(5, 5)

1. The first 12 (r, c) coordinates to be popped off the queue are:

(3, 5)

(4, 5)

(3, 4)

(3, 6)

(5, 5)

(3, 3)

(2, 4)

(6, 5)

(5, 4)

(1, 4)

(7, 5)

(5, 3)

The two algorithms differ in the order that they pop the coordinates. A stack pops the most recently pushed Coord whereas a queue pops Coords in the same order as they are input. As a result of this difference, the stack algorithm is classified as a depth-first search since it follows a single path as deep as it can, and the queue algorithm is classified as a breadth-first search since it expands outwards through all of the possible paths.