HW

2) First 12 coordinates popped off the mazestack.cpp’s pathExists:  
1: (6, 4)

2: (5, 4)

3: (4, 4)

4: (3, 4)

5: (2, 4)

6: (1, 4)

7: (1, 5)

8: (1, 6)

9: (1, 7)

10: (1, 8)

11: (1, 7)

12: (1, 6)

4) First 12 coordinates popped off the mazequeue.cpp’s pathExists:

1: (6, 4)

2: (5, 4)

3: (6, 5)

4: (6, 3)

5: (4, 4)

6: (6, 6)

7: (7, 5)

8: (3, 4)

9: (4, 5)

10: (8, 5)

11: (2, 4)

12: (4, 6)

4) How do the two algorithms differ from each other?

The mazestack’s pathExists performs a depth search. For each valid adjacent cell that pathExists looks over, pathExists continues searching in that area until it has exhausted all the area's cells. If the target location has not been found, pathExists will incrementally pop locations off the stack so that it can continue the same method.

Unlike the mazestack's pathExists, mazequeue's pathExists performs a breadth search. At each valid location, pathExists will push all the adjacent cell’s coordinates onto its queue. If either location is the target location, the queue will stop. Otherwise, pathExists will pop the most recent location and repeat the process. This results in the the formation of "concentric circles", as the breadth of the search incrementally expands.

mazestack’s takes more time than mazequeue’s to solve the maze because of its heavily thorough searching and inefficient backtracking.