Ashley Chang

504449890

Homework 2

2. The first 12 coordinates of the stack are:

**(6,4)**

**(6,3)**

**(5,3)**

**(5,2)**

**(5,1)**

**(4,1)**

**(3,1)**

**(3,2)**

**(4,2)**

**(6,5)**

**(7,5)**

**(8,5)**

4. The first 12 coordinates of the queue are:

**(6,4)**

**(5,4)**

**(6,5)**

**(6,3)**

**(4,4)**

**(5,3)**

**(6,6)**

**(7,5)**

**(3,4)**

**(4,5)**

**(5,2)**

**(8,5)**

The algorithms differ in the manner of popping. Stacks are “depth first”, while queues are “breadth first.” This means that for stacks, whatever is pushed/inserted most recently will be removed the most quickly, and items enter the stack first will not be popped/accessed until much later, after more recently stacked items are removed first. Thus, in a maze, when a stack algorithm encounters a path, it will try to explore it completely before moving on to another. On the other hand, queues pop whatever was inserted earliest (least recently) in a “first in, first out” manner. Items that are pushed later will be accessed later. In a maze, this means that a queue algorithm will explore bits of several different pathways at once.