2. The first twelve coordinates popped off the stack are: (6, 4) (6, 3) (6, 5) (7, 5) (8, 5) (8, 6) (8, 7) (8, 8) (7, 8) (6, 6) (5, 4) (4, 4)

4. The first twelve coordinates popped off the queue are: (6, 4) (5, 4) (6, 5) (6, 3) (4, 4) (6, 6) (7, 5) (3, 4) (4, 5) (8, 5) (2, 4) (4, 6)

As for the stack, it pops off the last valid coordinate that was pushed into the stack, which follows the “last in first out” rule. When investigating the route to the exit, the stack algorithm will trace along one particular direction until it hits a dead end, and then change to another direction, since it always explores the last coordinates popped into the stack. This searching algorithm is called a depth-first search. As for the queue, it pops off the first valid coordinate that was pushed into the queue, which follows the “first in first our” rule. When investigating the route to the exit, instead of searching the last coordinates, the queue algorithm explores the oldest coordinates on the front of the queue. It expands its searched area in equal distance toward every direction, like ripples in a pond. This algorithm is called breadth-first search.