Problem 2:

For Stack:

(6, 4)

(6, 5)

(7, 5)

(8, 5)

(8, 6)

(8, 7)

(8, 8)

(7, 8)

(6, 6)

(5, 4)

(4, 4)

Problem 4:

For Queue:

(6, 4)

(5, 4)

(6, 5)

(4, 4)

(6, 6)

(7, 5)

(3, 4)

(4, 5)

(8, 5)

(2, 4)

(4, 6)

The difference between the two data structure is that when push and use pop, stack always finds the most recently pushed in one. And therefore, the steps that the stack algorithm took is quite consequtive as one may see. For queue, however, we get the element that stayed the longest in the queue and therefore the output we get is quite discontinued. This is because: we have 4 if statement, and for every iteration we are likely to get more than one possible cases (visit the if block more then once per iteration).

For comparison, just for the instance provided by the professor, queue method took less time comparing to the stack method. 3