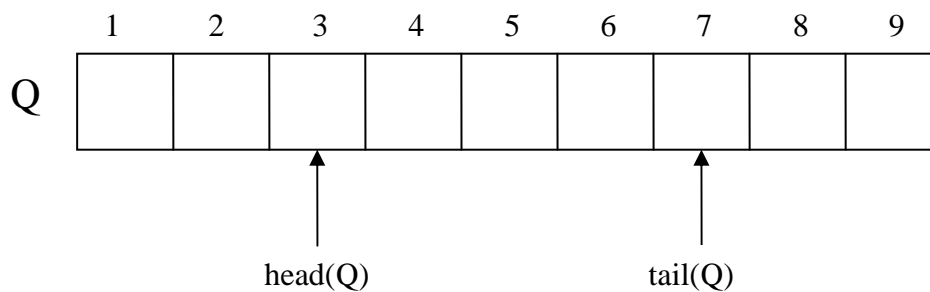


## Exercise sheet 7

### Exercise 16:

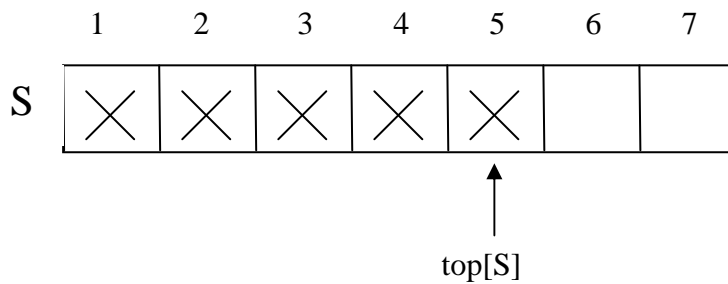
- a) Using the figure as a model, illustrate the result of each operation in the sequence ENQUEUE(Q,4), ENQUEUE(Q,1), ENQUEUE(Q,3), DEQUEUE(Q), ENQUEUE(Q,8), and DEQUEUE(Q) on an initially empty queue Q stored in array  $Q[1..9]$ .



Note: Initially empty Q means  $\text{head}(Q) = \text{tail}(Q) = 1$

### Exercise 16:

- b) Using the figure as a stack model, illustrate the result of each operation in the sequence  $\text{PUSH}(S,4)$ ,  $\text{PUSH}(S,1)$ ,  $\text{PUSH}(S,3)$ ,  $\text{POP}(S)$ ,  $\text{PUSH}(S,8)$ , and  $\text{POP}(S)$  on an initially empty stack  $S$  stored in array  $S[1..7]$ .



### Exercise 17:

Write pseudocode for a non-recursive procedure  $\text{Reverse}(L)$  that reverses a singly linked list  $L$ . The procedure should run in linear time (in the length of the list) and should use no more than constant storage beyond that needed for the list itself.