4.

5.

A)

|  |  |  |
| --- | --- | --- |
| operaatio | tulos | S |
| S.push(a); |  | (a) |
| S.push(b); |  | (a,b) |
| S.push(c); |  | (a,b,c) |
| S.pop(); | c | (a,b) |

B)

|  |  |  |
| --- | --- | --- |
| operaatio | tulos | S |
| S.push(a); |  | (a) |
| S.push(S.top()); | a | (a,a) |
| S.push(b); |  | (a,a,b) |
| S.push(S.pop()); | b | (a,a,b) |
| S.push(S.top()); | b | (a,a,b,b) |

C)

|  |  |  |
| --- | --- | --- |
| operaatio | tulos | Q |
| Q.enqueue(a); |  | (a) |
| Q.dequeue(); | a | () |
| Q.enqueue(b); |  | (b) |
| Q.enqueue(c); |  | (c,b) |

D)

|  |  |  |  |
| --- | --- | --- | --- |
| operaatio | tulos | S | Q |
| S.push(a); |  | (a) | () |
| Q.enqueue(b); |  | (a) | (b) |
| Q.enqueue(S.top()); | a | (a) | (a,b) |
| S.push(Q.dequeue()); | b | (a,b) | (a) |
| S.pop(); | b | (a) | (a) |
| S.push(Q.front()); | a | (a,a) | (a) |

6.

Kaksi pinoa

Uusi alkio siirretään pinon1 kärkeen

1. Enqueue(x)  
    S1.push(x)

Jos pino1 ei ole tyhjä siirrä sen sisältö pinoon2

1. Dequeue
2. if (S2.isEmpty)
3. while (!S1.isEmpty)
4. do S2.push(s1.pop)
5. EndWhile
6. return S2.pop

7.

8.