Consider a sequence a of elements $a_0=1$, $a_1=5$, $a_2=7$, $a_3=8$, $a_4=9$, and $a_5=2$.

The following operations are performed on a stack S and a queue Q, both of which are initially empty.

1. push the elements of a from a0 to a5 in that order into S.
2. enqueue the elements of a from a0 to a5 in that order into Q.
3. pop an element from S.
4. dequeue an element from Q.
5. pop an element from S.
6. dequeue an element from Q.
7. dequeue an element from Q and push the same element into S.
8. Repeat operation VII three times.
9. pop an element from S.
10. pop an element from S.

The top element of S after executing the above operations is _____.

View answer
8

Practice Problem

Consider a sequence a of elements $a_0=2$, $a_1=6$, $a_2=8$, $a_3=9$, $a_4=10$, and $a_5=3$.

The following operations are performed on a stack S and a queue Q, both of which are initially empty.

1. push the elements of a from a0 to a5 in that order into S.

2. enqueue the elements of a from a0 to a5 in that order into Q.

3. pop an element from S.

4. dequeue an element from Q.

5. pop an element from S.

6. dequeue an element from Q.

7. dequeue an element from Q and push the same element into S.

8. Repeat operation VII three times.

9. pop an element from S.

10. pop an element from S.

The top element of S after executing the above operations is _____.

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