Poker

Icy likes to play poker. Recently she came up with a new trick about poker. She allows her friend to add or remove poker cards from the top of the pile. And she thinks that with the help of computer program, she will be capable of telling her friend the largest value in the current pile of cards instantly. All the operations are done on the top of pile. Could you help Icy to write such a program?

Initially there is no card in the pile and we denote each card by a distinct integer ranging from 1 to 100,000,000.

Input

The input contains multiple test cases. The first line of input is an integer T (1 <= T <= 100) representing the number of test cases.

For each test case the first line gives an integer **n** showing the number of cards to be added to the empty pile at the beginning. The following line gives **n** integers representing cards to be added. Then, the next line contains an integer **m** indicating the number of operations and there will be **m** lines followed where each line gives the operation in the format:

(1) m : (max operation) query the largest value in the current pile

(2) r : (remove operation) remove the card at the top

(3) a i : (add operation) add a card with value i to the pile

It is guaranteed that 1<= **n**, **m** <= 10000 and for each "max" or “remove" operation, there is at least one card in the pile.

Output

For each "max" operation, output the maximum value in the pile in a separate line.

Sample Input	Sample Output
1 5 29 5 28 17 1 7 m r a 70 m r r m	29 70 29

Hints:

Initially, 1 is on the top of the pile, and the “max” operation will return the largest value 29.

After “remove” operation, 1 is removed and then “add 70” will put 70 on the top and so on.