**SuperMemo**

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| **Time Limit:** 5000MS |  | **Memory Limit:** 65536K |
|  |  |  |
| **Case Time Limit:** 2000MS | | |

**Description**

Your friend, Jackson is invited to a TV show called SuperMemo in which the participant is told to play a memorizing game. At first, the host tells the participant a sequence of numbers, {*A*1, *A*2, ... *An*}. Then the host performs a series of operations and queries on the sequence which consists:

1. *ADD x y D*: Add D to each number in sub-sequence {*Ax* ... *Ay*}. For example, performing "*ADD* 2 4 1" on {1, 2, 3, 4, 5} results in {1, 3, 4, 5, 5}
2. *REVERSE x y*: reverse the sub-sequence {*Ax* ... *Ay*}. For example, performing "*REVERSE* 2 4" on {1, 2, 3, 4, 5} results in {1, 4, 3, 2, 5}
3. *REVOLVE x y T*: rotate sub-sequence {*Ax* ... *Ay*} *T* times. For example, performing "*REVOLVE* 2 4 2" on {1, 2, 3, 4, 5} results in {1, 3, 4, 2, 5}
4. *INSERT x P*: insert *P* after *Ax*. For example, performing "*INSERT* 2 4" on {1, 2, 3, 4, 5} results in {1, 2, 4, 3, 4, 5}
5. *DELETE x*: delete *Ax*. For example, performing "*DELETE* 2" on {1, 2, 3, 4, 5} results in {1, 3, 4, 5}
6. *MIN x y*: query the participant what is the minimum number in sub-sequence {*Ax* ... *Ay*}. For example, the correct answer to "*MIN* 2 4" on {1, 2, 3, 4, 5} is 2

To make the show more interesting, the participant is granted a chance to turn to someone else that means when Jackson feels difficult in answering a query he may call you for help. You task is to watch the TV show and write a program giving the correct answer to each query in order to assist Jackson whenever he calls.

**Input**

The first line contains *n* (*n* ≤ 100000).

The following *n* lines describe the sequence.

Then follows *M* (*M* ≤ 100000), the numbers of operations and queries.

The following *M* lines describe the operations and queries.

**Output**

For each "*MIN*" query, output the correct answer.

**Sample Input**

5

1

2

3

4

5

2

ADD 2 4 1

MIN 4 5

**Sample Output**

5

**Source**

[POJ Founder Monthly Contest – 2008.04.13](http://poj.org/searchproblem?field=source&key=POJ+Founder+Monthly+Contest+%E2%80%93+2008.04.13), Yao Jinyu