PROBLEM 3

Let us consider a dice placed on a desk as shown in Fig. 1.
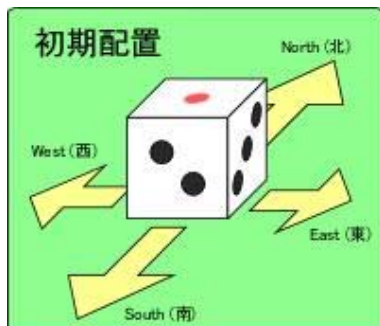

Figure 1: Initial configuration.

As you see, number 1 is on the upper side, 2 on the south side , 3 on the east side. Since the sum of the numbers on each pair of opposite sides is 7, it follows that 5 is on the north side, 4 on the west side, and 6 on the lower side, all of which are not seen in Fig. 1.

Starting with Fig.1 as the initial configuration, rotate the dice obeying given instructions. The instructions are one of 6 operations shown in Figs. 2 and 3.
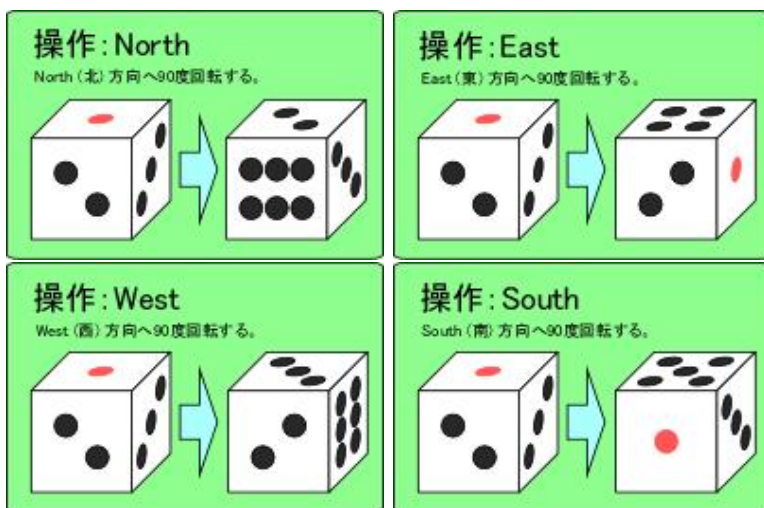

Figure 2: Rotations "North", "East", "South", and "West".

"North", "East", "South", and "West" are operations to rotate the dice 90° in the designated direction, as shown in Fig. 2.

"Right" and "Left" in Fig. 3 are operations to rotate the dice 90° horizontally in the right and left directions, respectively.

Your task is to write a program to perform operations successively accdording to a given sequence of instructions, starting from the initial configuration shown in Fig. 1. The program should output the sum of the numbers (including "1" of the initial configuration) appeared on the upper side of the dice in the course of rotations.
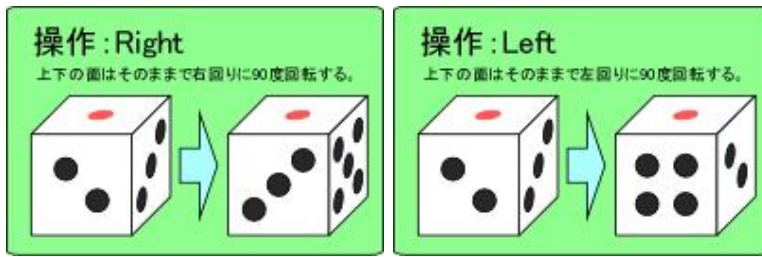
Figure 3: Rotations "Right" and "Left".

INPUT

The first line of an input file contains an integer n, the number of operations to be performed. The $i+1$-st line contains the i-th operation to perform, one of 6 operations, where $1 \le i \le m \le 1000$.

OUTPUT

Each output file should contain the sum, followed by the Return code at the end of line.

EXAMPLE

Example input 1	Example input 2
5	8
North	West
North	North
East	Left
South	South
West	Right
	North
	Left
	East

Example output 1	Example output 2
21	34