BlueBook - Direction

BlueBook

Given an integer N ($0 \leq N < 360$), print out the closest compass bearing to that integer if N is the bearing in degrees. If there is a tie, print the "smaller" of the two possible outputs.

The bearings arranged in increasing order of "size" are: N , E , S , W . This means choose N over E if the input is $45°$, and N over W when the input is $315°$.

Input Specification

The input consists of an integer T ($1 \leq T \leq 1\,000$), denoting the number of test cases and then each line following consists of one integer N.

Output Specification

Output the closest compass bearing according to the input.

Sample Input

```
2
45
180
```

Sample Output

```
N
S
```