B Lunchbox Hunt

Alex has decided to go on a treasure hunt to find Devon's hidden lunchbox somewhere inside the school. Fortunately for Alex, Devon left behind a set of instructions specifying the location of his lunchbox. The instructions consist of a starting location (x_0, y_0) and N $(1 \leq N \leq 1,000,000)$ queries. Each query consists of a direction specified by the characters 'N', 'S', 'E', and 'W', and a non-negative distance. Help Alex find the coordinates of the location of Devon's lunchbox.
Note: Alex's position (x, y) at any time is guaranteed to remain within $-1,000,000,000 \leq x, y \leq 1,000,000,000$.

INPUT FORMAT:
The first line will contain three integers N, x_0, and y_0. The following N lines will describe a query consisting of a character ('N', 'S', 'E', 'W') and a non-negative integer distance. 'N' corresponds to traveling in the positive y direction, etc.

OUTPUT FORMAT:
The output should consist of two integers separated by a space. The first integer is the final x coordinate and the second integer is the final y coordinate.

SAMPLE INPUT:

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4 6 -2
N 3
S 5
W 2
W 1
```

SAMPLE OUTPUT:

```
3 -4
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