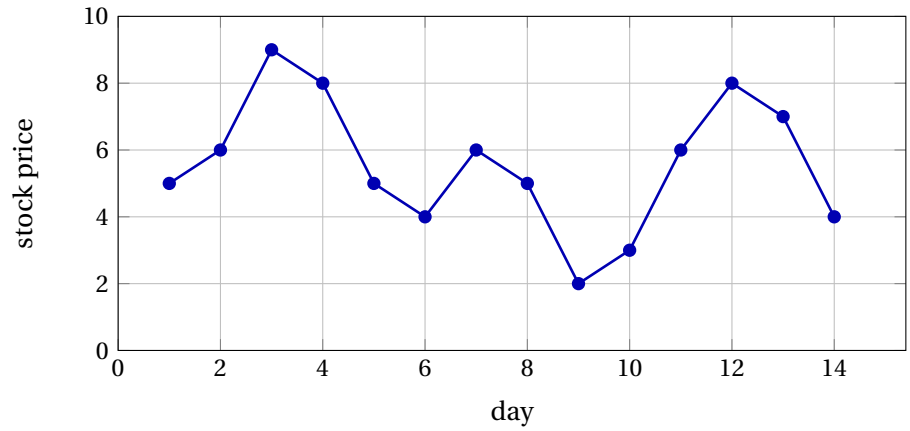
# Ups and Downs

by John Bonomo

Antonio has various theories on how and when the stock market will rise or fall. A characteristic of the market he is particularly interested in is the peaks and valleys of the price of particular stocks. Antonio's definition of a peak is an increasing sequence of at least $n$ consecutive stock prices ending on a peak day, and then a decreasing sequence of at least $n$ consecutive stock prices starting on the peak day. A valley is analogous: a decreasing sequence of at least $m$ consecutive stock prices ending on a valley day, and then an increasing sequence of at least $m$ consecutive stock prices starting on the valley day. The parameters $n$ and $m$ depend on the particular stock and might be different. For example, consider the two weeks of stock prices shown below:




If $n = 2$ and $m = 3$ then there are three peaks in this data (with highest points on days 3, 7 and 12) and one valley (with lowest point on day 9). Notice that there is no valley around day 6, since there is not an increasing sequence of length 3 starting at day 6.

Given a set of stock prices and values for $n$ and $m$, Antonio would like to know how many peaks and valleys there are in the data.

## Input

The first line contains three positive integers $s, n, m$, where $1 \le s \le 1000$ is the number of stock prices, and $2 \le n, m \le 100$ are the parameters described above. The following line contains $s$ stock prices. Stock prices are non-negative and no two consecutive stock prices will be the same.

## Output

Print the numbers of peaks and valleys in the data, on a single line, separated by a space.

## Examples

**Sample input 1**

```
14 2 3
5 6 9 8 5 4 6 5 2 3 6 8 7 4
```

**Sample output 1**

```
3 1
```

**Sample input 2**

```
14 3 2
5 6 9 8 5 4 6 5 2 3 6 8 7 4
```

**Sample output 2**

```
2 2
```

## Limits

Time limit is 1 second.
Memory limit is 256 megabytes.