COCI '10 Contest 5 #5 Dvoniz

Time limit: 0.5s **Memory limit:** 64M

We say that a sequence of $2K$ elements is **interesting** if neither the sum of the first K elements, nor the sum of the last K elements, is greater than S.

A sequence A of length N is given. For every element, output the length of the longest interesting subsequence starting with that element.

Input Specification

The first line contains integers N and S ($2 \leq N \leq 100\,000, 1 \leq S \leq 2 \times 10^9$).

The following N lines contain the sequence A, one integer per line. The integers are positive and their sum does not exceed 2×10^9.

Output Specification

Output must consist of N lines. i^{th} line must contain one integer, the length of the longest interesting subsequence starting with the i^{th} element. If an interesting subsequence at that position doesn't exist, output 0 (zero).

Sample Input 1

```
5 10000
1
1
1
1
1
```

Sample Output 1

```
4
4
2
2
0
```

Sample Input 2

```
5 9
1
1
10
1
9
```

Sample Output 2

```
2
0
0
2
0
```

Sample Input 3

```
8 3
1
1
1
1
1
1
1
1
```

Sample Output 3

```
6
6
6
4
4
2
2
0
```