Assembly's Draft

Problem Statement:

Indian constitution's draft has infinite number of pages. Constituent assembly's members can write laws in the draft on **n** consecutive days. During the **i^{th}** day they will write exactly **a_i** laws. They know that each page of the draft can contain exactly **m** laws. They will start writing laws from the first page and will write laws on the current page as long as the limit on the number of laws on this page is not exceeded. When the current page is over, they will turn the page.

Note: They can always turn the page when it ends, it doesn't matter if it is the last day or not. If after someday the current page still can hold at least one law, during the next day they will continue writing from the current page.

Assembly wants know how many they will turn the page during each day? They are interested in the number of pages they will turn each day from **1** to **n.**

Input: -

First line of input contains an integer **T** denoting the number of test cases.
First line of each test case contains two integers n, m denoting the number of days they will write laws in the draft and the number of laws which can be written on each page of the draft.
The second line contains n space separated integers **$a_1, a_2..., a_n$** , where a_i denotes the number of laws they will write in the draft during the **i^{th}** day.

Output:

Print exactly **n** integers **$t_1, t_2..., t_n$**, where **t_i** denotes the number of times they will turn the page during the **i^{th}** day.

Constraints:

$1 \leq T \leq 50$

$1 \leq n \leq 2*10^5$

$1 \leq m \leq 10^9$

$1 \leq a[i] \leq 10^9$

Time Limit:

1 sec

Example:

Input:

1

4 20

10 9 19 2

Output:

0 0 1 1

Problem Setter:

Piyush Jain