A Cumulative Sum Problem

Given an array a_0 of size **n** ($1 \leq n \leq 10^5$). Find the array a_k modulo (**7340033**)

where a_k = cumulative summation array of the array $\mathbf{a_{k-1}}$.

Means,

$$\mathbf{a_k}[1] = \mathbf{a_{k-1}}[1]$$

for $i > 1$, $\mathbf{a_k}[i] = \mathbf{a_k}[i\text{-}1] + \mathbf{a_{k-1}}[i]$

Given **k** ($0 \leq k \leq \mathbf{10^5}$)

Can you find the array a_k efficiently?

For example,

If $a_0 = \{1, 2, 1, 3\}$,

$a_1 = \{1, 3, 4, 7\}$

$a_2 = \{1, 4, 8, 15\}$

$a_3 = \{1, 5, 13, 28\}$

Input

First line will contain two integer **n**, **k** (size of the array and **k** from the problem description)

Following n positive integers separated by spaces denoting array a_0 .

All integers are smaller than 10^5.

Output

Output n integers of the array $\mathbf{a_k}$ with spaces in between.

Example

Input:

4 2

1 2 1 3

Output:
1 4 8 15