Adding Sequences

Filename: *sequences*
Time Limit: *1 second*

Given a sequence of *n* integers, we can create a new sequence of *n-1* integers by adding pairs of successive integers in the original sequence. For example, given the following input sequence of 7 values:

3 9 8 6 5 4 12

by adding each pair of consecutive items in the sequence we create the following 6 integer sequence:

12 17 14 11 9 16

Given an original sequence S of *n* integers, we define the sequence S_1 of *n - 1* integers to be the sequence obtained by performing this process on the sequence S. We define S_k to be the sequence obtained by performing this process on the sequence S_{k-1}, for all integers $2 \leq k < n$.

The Problem

Given an integer sequence, S, of *n* integers, as well as a positive integer value, *k*, determine the terms, in order, in the sequence S_k.

The Input

The first line of input will consist of a single positive integer, *c* ($c \leq 100$), representing the number of input cases to process. The first line of each input case contains a two space separated positive integers, *n* ($2 \leq n \leq 100$), representing the number of values in the original sequence, and *k* ($1 \leq k \leq n-1$), the value of *k* for the query. The second line of each input case will contain *n* space separated integers, representing the sequence of integers, in order, for the input case. The integers will be such that all of the values of the sequences S, S_1, S_2, S_3, ..., S_k will be valid 32-bit signed integers.

The Output

For each input case, output each integer in the sequence S_k, followed by a space, on a single line.

Sample Input

```
2
7 1
3 9 8 6 5 4 12
6 5
1 1 1 1 1 1
```

Sample Output

```
12 17 14 11 9 16
32
```