





GROUPS RATING EDU API CALENDAR HELP HOME TOP CATALOG CONTESTS GYM PROBLEMSET

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PROBLEMS SUBMIT CODE MY SUBMISSIONS STATUS STANDINGS CUSTOM INVOCATION

B. Move to the End

time limit per test: 2 seconds memory limit per test: 512 megabytes

You are given an array a consisting of n integers.

For every integer k from 1 to n, you have to do the following:

- 1. choose an arbitrary element of a and move it to the right end of the array (you can choose the last element, then the array won't change);
- 2. print the sum of k last elements of a;
- 3. move the element you've chosen on the first step to its original position (restore the original

For every k, you choose the element which you move so that the value you print is **the maximum** possible.

Calculate the value you print for every k.

Input

The first line contains one integer t ($1 \le t \le 10^4$) — the number of test cases.

Each test case consists of two lines:

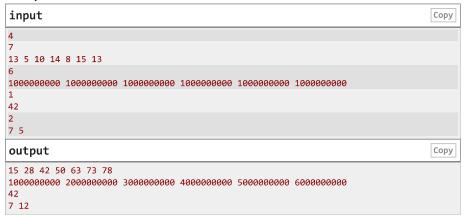
- the first line contains one integer n ($1 \le n \le 2 \cdot 10^5$);
- the second line contains n integers a_1, a_2, \ldots, a_n ($1 \le a_i \le 10^9$).

Additional constraint on the input: the sum of n over all test cases does not exceed $2 \cdot 10^5$.

Output

For each test case, print n integers. The i-th of these integers should be equal to the maximum value you can print if k=i.

Example

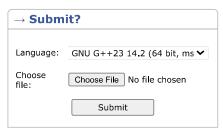


Note

Let's consider the first test case from the statement:

- ullet when k=1, you can move the $6 ext{-th}$ element to the end, the array becomes [13, 5, 10, 14, 8, 13, 15], and the value you print is 15;
- when k=2, you can move the 6-th element to the end, the array becomes [13, 5, 10, 14, 8, 13, 15], and the value you print is 13 + 15 = 28;
- ullet when k=3, you can move the 4-th element to the end, the array becomes [13, 5, 10, 8, 15, 13, 14], and the value you print is 15 + 13 + 14 = 42;
- when k=4, you can move the 5-th element to the end, the array becomes [13, 5, 10, 14, 15, 13, 8], and the value you print is 14 + 15 + 13 + 8 = 50;
- when k=5, you can move the 1-st element to the end, the array becomes [5, 10, 14, 8, 15, 13, 13], and the value you print is 14 + 8 + 15 + 13 + 13 = 63;





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317602047	Apr/28/2025 17:54	Accepted

- when k=6, you can move the 1-st element to the end, the array becomes [5,10,14,8,15,13,13], and the value you print is 10+14+8+15+13+13=73;
- when k=7, you can move the 6-th element to the end, the array becomes [13,5,10,14,8,13,15], and the value you print is 13+5+10+14+8+13+15=78.

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