

Problem(Categ. Math)

Recently Markul Zuckarwal took admission in college as a CSE student. He went to the Fresher Party with his friends. The game of Tambola(Bingo) was set to play, as an ambitious person he realized doing good here will make him popular among girls and peers. Planning for the win he went corrupt and asked his senior Steveyanshu Jobeja who is the moderator to “fix” this game in advance and tell him the numbers so he can buy the anticipated ticket, when the **CALLER** calls the **CUE** he can strike all the numbers, **CLAIM** the **FULL HOUSE** (the ticket with all the 15 numbers marked first) and eventually win. Steveyanshu denied for this unethical demand, but looking his zeal he agreed to help him in one condition. Steveyanshu will provide Markul with example **CUEs** but he has to predict the remaining. Help Markul predicting next numbers in **CUEs** to win this game.

“Help ya’ brotha out!”.

Input

The first line contain **N**, denoting total number of queries. Second line contain **CUEs**.

Output

Each output should full **CUE** including predicted numbers to **CLAIM** the **FULL HOUSE**.

Constraints

$2 \leq N \leq$
 $0 \leq \text{CUE} \leq$

Example

Input(1)	Output(1)
4 1 4 9 16	1 4 9 16 25 36 49 64 81 100 121 144 169 196 225

Input(2)	Output(2)
5 4 8 12 16 20	4 8 12 16 20 24 28 32 36 40 44 48 52 56 60

Input(3)	Output(3)
4 10 29 66 127	10 29 66 127 218 345 514 731 1002 1333 1730 2199 2746 3377 4098

Algorithm

```
#include <iostream>
#include <vector>
#define loop(L, M) for(int i = L; i < M; i++)
using namespace std;

template <typename T>
T dif_tab(T n, vector<T>& array) {
    int save[n], sum = 0;
    while (n--) {
        loop (0, n) array[i] = save[i] = array[i+1] - array[i];
        sum += array[n];
    }
    return sum;
}

int main () {
    int n, temp;
    cin >> n;
    vector<int> array;
    loop (0, n) {
        cin >> temp;
        array.push_back(temp);
    }
    cout << dif_tab(n, array);
    return 0;
}
```