Bon Appétit

by shashank21j

Anna and Brian order n items at a restaurant, but Anna declines to eat any of the k^{th} item (where $0 \leq k < n$) due to an allergy. When the check comes, they decide to split the cost of all the items they shared; however, Brian may have forgotten that they didn't split the k^{th} item and accidentally charged Anna for it.

You are given n, k, the cost of each of the n items, and the total amount of money that Brian charged Anna for her portion of the bill. If the bill is fairly split, print `Bon Appetit`; otherwise, print the amount of money that Brian must refund to Anna.

Input Format

The first line contains two space-separated integers denoting the respective values of n (the number of items ordered) and k (the 0-based index of the item that Anna did not eat).
The second line contains n space-separated integers where each integer i denotes the cost, $c[i]$, of item i (where $0 \leq i < n$).
The third line contains an integer, $b_{charged}$, denoting the amount of money that Brian charged Anna for her share of the bill.

Constraints

- $2 \leq n \leq 10^5$
- $0 \leq k < n$
- $0 \leq c[i] \leq 10^4$
- $0 \leq b \leq \sum c[i]$

Output Format

If Brian did not overcharge Anna, print `Bon Appetit` on a new line; otherwise, print the difference (i.e., $b_{charged} - b_{actual}$) that Brian must refund to Anna (it is guaranteed that this will always be an integer).

Sample Input 0

```
4 1
3 10 2 9
12
```

Sample Output 0

```
5
```

Explanation 0

Anna didn't eat item $c[1] = 10$, but she shared the rest of the items with Brian. The total cost of the shared items is $3 + 2 + 9 = 14$ and, split in half, the cost per person is $b_{actual} = 7$. Brian charged her $b_{charged} = 12$ for her portion of the bill, which is more than the 7 dollars worth of food that she actually shared with him. Thus, we print the amount Anna was overcharged, $b_{charged} - b_{actual} = 12 - 7 = 5$, on a new line.

Sample Input 1

```
4 1
3 10 2 9
7
```

Sample Output 1

```
Bon Appetit
```

Explanation 1

Anna didn't eat item $c[1] = 10$, but she shared the rest of the items with Brian. The total cost of the shared items is $3 + 2 + 9 = 14$ and, split in half, the cost per person is $b_{actual} = 7$. Because this matches the amount, $b_{charged} = 7$, that Brian charged Anna for her portion of the bill, we print `Bon Appetit` on a new line.

Submissions:56119

Max Score:10

Difficulty: Easy

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Current Buffer (saved locally, editable) C++14

```cpp
#include <bits/stdc++.h>
using namespace std;

int bonAppetit(int n, int k, int b, vector <int> ar) {
    // Complete this function
    int i, sum;

    sum = 0;
    for (i = 0; i < ar.size(); i++)
    {
        if (i != k) sum += ar[i];
    }

    sum /= 2;

    if (b == sum)
    {
        cout << "Bon Appetit\n";
        exit(1);
    }
    return b-sum;
}

int main() {
    int n;//the number of items ordered
    int k;//index of the item that Anna did not eat
    cin >> n >> k;
    vector<int> ar(n);
    for(int ar_i = 0; ar_i < n; ar_i++)
       cin >> ar[ar_i]; // the cost

    int b; // the amount of money that Brian charged Anna for her share of the bill.
    cin >> b;
    int result = bonAppetit(n, k, b, ar);
    cout<<result<<endl;
    /*if(result/2==b)
    {
        cout<<"Bon Appetit"<<endl;
        return 0;
    }
    else
        cout<<b-(result/2)<<endl;*/
    return 0;
}
```

Line: 1 Col: 1

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