1112 - Curious Robin Hood

SUBMIT	PDF (English)	Statistics	Forum
Time Limit: 1 second(s)		Memory Limit: 64 MB	

Robin Hood likes to loot rich people since he helps the poor people with this money. Instead of keeping all the money together he does another trick. He keeps **n** sacks where he keeps this money. The sacks are numbered from **0** to **n-1**.

Now each time he can he can do one of the three tasks.

1) Give all the money of the i^{th} sack to the poor, leaving the sack empty.
2) Add new amount (given in input) in the i^{th} sack.
3) Find the total amount of money from i^{th} sack to j^{th} sack.

Since he is not a programmer, he seeks your help.

Input

Input starts with an integer **T (≤ 5)**, denoting the number of test cases.

Each case contains two integers **n (1 ≤ n ≤ 10^5)** and **q (1 ≤ q ≤ 50000)**. The next line contains **n** space separated integers in the range **[0, 1000]**. The i^{th} integer denotes the initial amount of money in the i^{th} sack **(0 ≤ i < n)**.

Each of the next **q** lines contains a task in one of the following form:

1 i Give all the money of the i^{th} **(0 ≤ i < n)** sack to the poor**.**
2 i v Add money **v (1 ≤ v ≤ 1000)** to the i^{th} **(0 ≤ i < n)** sack.
3 i j Find the total amount of money from i^{th} sack to j^{th} sack **(0 ≤ i ≤ j < n)**.

Output

For each test case, print the case number first. If the query type is **1**, then print the amount of money given to the poor. If the query type is **3**, print the total amount from i^{th} to j^{th} sack.

Sample Input	Output for Sample Input
1 5 6 3 2 1 4 5 1 4 2 3 4 3 0 3 1 2 3 0 4 1 1	Case 1: 5 14 1 13 2

Notes

Dataset is huge, use faster I/O methods.

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