

Segment Tree 2

Input file: **standard input**
Output file: **standard output**
Time limit: 2 seconds
Memory limit: 512 megabytes

Too lazy to write statement. Just make up some story yourself or something. Like seriously what do you want me to write for a segment tree problem.

You have an array, A_1, A_2, \dots, A_N . You have to perform Q operations of 2 types.

- 1 1 l r k : For all i in $[l, r]$, increment A_i by k .
- 2 1 l r : Find $A_l + A_{l+1} + \dots + A_r$.

Input

The first line of input contains 2 integers, N and Q ($1 \leq N \leq 10^9, 1 \leq Q \leq 10^5$). The following Q lines of input contains on of the following:

- 1 1 l r k ($1 \leq l \leq r \leq N, |k| \leq 10^4$)
- 2 1 l r ($1 \leq l \leq r \leq N$)

Output

For each operation of type 2 print the answer of the query in a new line.

Scoring

Subtask 1: $l = r$ for operations of type 1 (31 point)

Subtask 2: No additional constraints (69 points)

Example

standard input	standard output
5 5	1
1 2 3 1	4
2 3 5	14
1 1 3 4	
2 1 1	
2 1 5	