

Stacks

Input file: **standard input**
Output file: **standard output**
Time limit: 2 seconds
Memory limit: 1024 megabytes

There are n stacks, numbered from 1 to n . There are also m operations, which come in three types:

- $1\ l\ r\ x\ y$, meaning to push x copies of y onto each stack numbered within the interval $[l, r]$.
- $2\ l\ r\ w$, meaning to perform the pop operation w times on each stack numbered within the interval $[l, r]$. Here, the pop operation means that if the stack is empty, do nothing; otherwise, pop the top element.
- $3\ k\ p\ q$, meaning to query the sum of elements from the p -th to the q -th, starting from the bottom of the stack numbered k . If the i -th element does not exist in the stack, it is considered to be 0.

Help me to process all the m operations.

Input

The first line contains two integers n and m ($1 \leq n, m \leq 10^5$).

The following m lines describe an operation each, in the form of:

- $1\ l\ r\ x\ y$ ($1 \leq l \leq r \leq n, 1 \leq x, y \leq 10^5$), to push x copies of y onto each stack numbered within the interval $[l, r]$.
- $2\ l\ r\ w$ ($1 \leq l \leq r \leq n, 1 \leq w \leq 10^{10}$), to perform the pop operation w times on each stack numbered within the interval $[l, r]$.
- $3\ k\ p\ q$ ($1 \leq k \leq n, 1 \leq p \leq q \leq 10^{10}$), to query the sum of elements from the p -th to the q -th, starting from the bottom of the stack numbered k .

Output

For each query, output a single line contains a single integer, representing the answer.

Example

standard input	standard output
4 8	4
1 1 3 3 2	5
1 2 4 2 1	2
3 1 2 4	2
3 2 2 4	
2 2 3 1	
2 1 2 2	
3 1 1 1	
3 2 2 3	