Division Queries and Updates

Time limit: 1.5s **Memory limit:** 256M

You are given an array A of size N, with all elements initially equal to 0. Support the following operations:

- Type 1: Given l and r, increment all A_i with $l \leq i \leq r$ by 1.
- Type 2: Given l and r, return the sum of all $\left\lfloor \frac{A_i}{i} \right\rfloor$ for $l \leq i \leq r$.

Constraints

For all subtasks:

$1 \leq N \leq 10^9$

$1 \leq Q \leq 2 \times 10^5$

$1 \leq t_i \leq 2$

$1 \leq l_i \leq r_i \leq N$

Subtask 1 [20%]

$1 \leq N, Q \leq 2\,000$

Subtask 2 [80%]

No additional constraints.

Input Specification

The first line contains 2 integers N and Q, the size of the array and the number of operations to be performed.

The next Q lines each contain 3 integers t_i, l_i, r_i $(1 \leq i \leq Q)$, the type number of the i^{th} operation and the parameters l and r for that operation.

Output Specification

For each operation of type 2 output an integer on its own line, the return value of the operation.

Sample Input

```
8 8
2 1 8
1 1 4
2 1 2
2 2 8
1 2 3
1 2 7
1 2 8
2 1 8
```

Sample Output

```
0
1
0
4
```

Explanation

Right before the last operation, $A = [1, 4, 4, 3, 2, 2, 2, 1]$. The sum of all $\left\lfloor \frac{A_i}{i} \right\rfloor$ for $1 \leq i \leq 8$ is $1 + 2 + 1 + 0 + 0 + 0 + 0 + 0 = 4$.