E. DZY Loves Colors

time limit per test: 2 seconds
memory limit per test: 256 megabytes

DZY loves colors, and he enjoys painting.

On a colorful day, DZY gets a colorful ribbon, which consists of n units (they are numbered from 1 to n from left to right). The color of the i-th unit of the ribbon is i at first. It is colorful enough, but we still consider that the colorfulness of each unit is 0 at first.

DZY loves painting, we know. He takes up a paintbrush with color x and uses it to draw a line on the ribbon. In such a case some contiguous units are painted. Imagine that the color of unit i currently is y. When it is painted by this paintbrush, the color of the unit becomes x, and the colorfulness of the unit increases by $|x - y|$.

DZY wants to perform m operations, each operation can be one of the following:

1. Paint all the units with numbers between l and r (both inclusive) with color x.
2. Ask the sum of colorfulness of the units between l and r (both inclusive).

Can you help DZY?

Input

The first line contains two space-separated integers n, m ($1 \le n, m \le 10^5$).

Each of the next m lines begins with a integer $type$ ($1 \le type \le 2$), which represents the type of this operation.

If $type = 1$, there will be 3 more integers l, r, x ($1 \le l \le r \le n$; $1 \le x \le 10^8$) in this line, describing an operation 1.

If $type = 2$, there will be 2 more integers l, r ($1 \le l \le r \le n$) in this line, describing an operation 2.

Output

For each operation 2, print a line containing the answer — sum of colorfulness.

Examples

input Copy

```
3 3
1 1 2 4
1 2 3 5
2 1 3
```

output Copy

```
8
```

input Copy

```
3 4
1 1 3 4
2 1 1
2 2 2
2 3 3
```

output Copy

```
3
2
1
```

input Copy

```
10 6
1 1 5 3
1 2 7 9
1 10 10 11
1 3 8 12
1 1 10 3
2 1 10
```

output Copy

```
129
```

Note

In the first sample, the color of each unit is initially $[1, 2, 3]$, and the colorfulness is $[0, 0, 0]$.

After the first operation, colors become $[4, 4, 3]$, colorfulness become $[3, 2, 0]$.

After the second operation, colors become $[4, 5, 5]$, colorfulness become $[3, 3, 2]$.

So the answer to the only operation of type 2 is 8.

Codeforces Round 254 (Div. 2)
Finished
Practice

→ Virtual participation

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Start virtual contest

→ Clone Contest to Mashup

You can clone this contest to a mashup.

Clone Contest

→ Submit?

Language: GNU G++20 13.2 (64 bit, win

Choose file: Choose File No file chosen

Submit

→ Last submissions

Submission	Time	Verdict
309272255	Mar/07/2025 00:12	Accepted
309211977	Mar/06/2025 16:15	Accepted
309188865	Mar/06/2025 13:24	Time limit exceeded on test 14
309186228	Mar/06/2025 12:59	Wrong answer on test 6
309185905	Mar/06/2025 12:56	Time limit exceeded on test 14
309185185	Mar/06/2025 12:49	Time limit exceeded on test 14
309184525	Mar/06/2025 12:43	Time limit exceeded on test 14
309172884	Mar/06/2025 11:01	Wrong answer on test 6

→ Problem tags

data structures *2400

No tag edit access

→ Contest materials

- Codeforces Round #254 (en)
- Codeforces Round #254 (ru)
- Tutorial (en)