Speakers

Input file:	*standard input*
Output file:	*standard output*
Time limit:	2.5 seconds
Memory limit:	512 MB

Axel is obsessed with Che, an underground rapper nobody else in his neighbourhood has heard of. Since nobody wants to listen with him, Axel decided to make the whole neighbourhood listen instead.

The neighbourhood consists of N positions on a straight line, numbered from 1 to N. Initially, there are no speakers.

A speaker is described by four integers p, a, b, and x. It is placed at position p, blasts Che at initial loudness a, loses b units of loudness for every unit of distance, and, because of the way its special frequency resonates, can be heard only at positions whose distance from p is a multiple of x.

More precisely, the loudness such a speaker delivers to position q is

$$L(q) = \begin{cases} \max(0, a - b \cdot |p - q|), & \text{if } x \mid |p - q|, \\ 0, & \text{otherwise.} \end{cases}$$

You have to process Q operations of two types:

- `1 p a b x` – install a new speaker described by the values p, a, b, and x.
- `2 p` – determine the maximum loudness of Che heard at position p from any speaker installed so far.

Speakers are never removed, and multiple speakers may be installed at the same position. If no previously installed speaker reaches the queried position with positive loudness, the answer is 0.

Your task is to efficiently process all Q operations.

Input

The first line contains two integers N and Q ($1 \le N \le 100\,000$, $1 \le Q \le 100\,000$).

Each of the following Q lines describes one operation.

For an operation of type 1, the line contains five integers `1 p a b x`, where $1 \le p \le N$, $1 \le x \le N$, and $0 \le a, b \le 10^9$.

For an operation of type 2, the line contains two integers `2 p`, where $1 \le p \le N$.

Output

For every operation of type 2, output one line containing the maximum loudness heard at the queried position.

Examples

standard input	standard output
10 9 1 2 20 2 3 2 8 2 7 1 8 15 1 2 2 8 2 5 1 5 100 20 4 2 1 2 9	8 0 15 14 20 20

Note

The first speaker is installed at position 2, with parameters $a = 20$, $b = 2$, and $x = 3$. Therefore, it can be heard only at positions whose distance from 2 is divisible by 3.

At position 8, the distance is 6, so its loudness there is $20 - 2 \cdot 6 = 8$.

At position 7, the distance is 5, which is not divisible by 3, so the loudness is 0.

After the second speaker is installed at position 8, the answer at position 8 becomes 15.

At position 5, the first speaker delivers $20 - 2 \cdot 3 = 14$, while the second speaker cannot be heard there because $2 \nmid |8 - 5|$.

The third speaker is installed at position 5, with $x = 4$. Both positions 1 and 9 are at distance 4, so its loudness at each of them is $100 - 20 \cdot 4 = 20$.