# Problem A. Big Money

| | |
|---|---|
| Input file: | `standard input` |
| Output file: | `standard output` |
| Time limit: | 1 second |
| Memory limit: | 512 megabytes |

Peter won a lot of money in the lottery — a huge amount of $m$ rubles! Peter is smart, so instead of wasting his winnings he decided to make a deposit in the bank. But making one deposit can be risky, so he decided to make two instead.

The bank asks Peter to choose one of $n$ offers. Each offer consists of two deposits, each of which is characterized by three numbers $l$, $r$ and $p$ — making a deposit of not less than $l$ and not more than $r$ rubles, Peter will receive back the invested money plus an additional $p$ percent of them upon the expiration of the deposit term. In each offer you can use either of the two deposits or even use none of them, but if you make two deposits at once you need to invest money to both of them at the same time and profit from the deposits will be received independently of each other. Different offers cannot be combined.

Peter is already dreaming of making his wishes come true, so he turned to you for help. For each offer calculate how much money Peter may have if he uses the deposits offered.

## Input

The first two lines contain integers $m$ and $n$ ($1 \le m \le 2 \cdot 10^9$, $1 \le n \le 10^5$) — Peter's money and the number of bank offers. The following $n$ lines contain six integers $l_1$, $r_1$, $p_1$, $l_2$, $r_2$, $p_2$ ($1 \le l_i \le r_i \le 2 \cdot 10^9$, $1 \le p_i \le 200$) — description of the offered deposits.

## Output

For each offer print in a separate line one number — the maximum amount of money that Peter may have. The answer will be considered correct if its absolute or relative error does not exceed $10^{-9}$. Namely: let's assume that your answer is $a$, and the answer of the jury is $b$. The checker program will consider your answer correct, if $\frac{|a-b|}{\max(1,a)} \le 10^{-9}$.

## Scoring

| Subtask | Score | Constraints | |
|---|---|---|---|
| | | $\sum r$ | Additional |
| 1 | 10 | $\sum r \le 4000$ | — |
| 2 | 15 | $\sum r \le 4 \cdot 10^6$ | — |
| 3 | 20 | $\sum r \le 2 \cdot 10^9$ | $l = 1$ |
| 4 | 20 | $\sum r \le 2 \cdot 10^9$ | $l = r$ |
| 5 | 35 | $\sum r \le 2 \cdot 10^9$ | — |

## Example

| standard input | standard output |
|---|---|
| 100<br>3<br>1 50 5 1 51 10<br>70 200 100 30 95 110<br>179 239 40 109 140 31 | 107.550000000<br>204.500000000<br>100.000000000 |

## Note

For the first offer, it is optimal to put 49 rubles in the first deposit and 51 in the second deposit, then Peter will receive $0.05 \cdot 49 + 0.1 \cdot 51 = 7.55$ rubles of profit. For the second offer, it is optimal to put 95 rubles in the second deposit, and not to use the first deposit at all, then Peter will receive $1.1 \cdot 95 = 104.5$ rubles of profit. For the third offer, Peter cannot use any of the deposits.