



Task Igre

Kile has returned from a board game fair. He brought home n games. Before playing a game, it is necessary to learn its rules. Learning the rules of the i -th game takes p_i minutes. Once the rules are learned, it is possible to play the game. Playing the i -th game takes t_i minutes. Each game also has its own rating o_i .

In the coming days, Kile has planned to spend at most d minutes on board games. He is interested in finding out the maximum sum of the ratings of the games he can play. Each game can be played an arbitrary number of times.



Input

The first line contains integers n and d ($1 \leq n, d \leq 5000$), the number of games and the time planned to spend on playing games.

The i -th of the following n lines contains integers p_i , t_i and o_i ($0 \leq p_i \leq 5000, 1 \leq t_i \leq 5000, 1 \leq o_i \leq 10^9$), time required to learn the rules, time required to play and the rating of i -th game.

Output

In the first and only line, output the maximum sum of the ratings of the games played.

Scoring

Subtask	Points	Constraints
1	6	$n = 1$
2	13	$n \leq 10$
3	23	$p_i = 0$ for all $i = 1, \dots, n$
4	28	No additional constraints.

Examples

input

```
3 10
2 3 5
5 1 5
3 2 5
```

output

```
25
```

input

```
4 13
0 6 5
0 3 4
0 2 3
0 4 4
```

output

```
19
```

input

```
3 10
1 1 1
3 2 3
2 3 5
```

output

```
11
```

Clarification of the third example:

One way to achieve a total score of 11 is as follows: in the first minute, Kile learns to play the first game, then plays it once. After that, he spends two minutes learning to play the third game, and in the last 6 minutes, he plays it twice. This way, the total score of the games played is: $1 + 5 + 5 = 11$.