Problem A. あなた達、Roselia にすべてを賭ける覚悟はある？

Time limit 1000 ms
Memory limit 256MB

Problem Description

After years of sleepless nights, infinite debugging sessions, and countless cups of cold coffee, Howard has finally done it. In the grand arena of the ICPC World Finals, he single-handedly carried his team through the toughest problem set ever seen. With the clock ticking down and the audience holding their breath, his final submission hit ”Accepted”, securing their place in history as ICPC World Champions.

But even champions face new challenges.

Now that the dust has settled, Howard finally has time to do something he’s dreamed of for years — a long-awaited trip to Japan. For the first time in forever, he’s not traveling for a programming contest, but for something dearer to his heart: anime and music.

Howard is a hardcore otaku, especially a diehard fan of the band Roselia from the anime BanG Dream!. His love for the band runs so deep that he even named his ICPC team after it — Team NYCU_Roselia. On this special trip, he plans to attend Roselia’s live concert in Yokohama, a dream come true after solving tens of thousands of problems and carrying his team to glory.

But before he can set off, there’s one last problem he must solve — a packing dilemma worthy of a World Champion.

Howard’s suitcase can hold at most W units of capacity. He has N different kinds of items he

might want to bring along, each with a size, a happiness value, and a limited (or unlimited) quantity. Some items are essentials — like his laptop or headphones. Others are purely sentimental — like the five plushies of Roselia's members: Minato Yukina, Hikawa Sayo, Imai Lisa, Udagawa Ako, and Shirokane Rinko.

Each of them brings him immense joy and comfort whenever he has them nearby.

Plushies

For each type of item $i (1 \leq i \leq N)$, you are given three integers:

- a_i — the size of one unit of that item,
- b_i — the happiness that item gives to Howard,
- c_i — the quantity available.
  - If $c_i = 0$, it means Howard has an infinite supply of that item.
  - Otherwise, he can bring up to c_i of them.

Your task is to help Howard decide how to maximize his total happiness while keeping the total packed size within W.

Input format

The first line contains two integers N and W — the number of item types and the capacity of Howard's suitcase. $(1 \leq N \leq 10^4, 0 \leq W \leq 100)$

Each of the next N lines contains three integers a_i, b_i, c_i $(1 \leq a_i \leq W, 1 \leq b_i \leq 10^5, 0 \leq c_i \leq 1000)$

Output format

Print a single integer — the maximum total happiness Howard can achieve without exceeding his suitcase's capacity.

Subtask score

Subtask	Score	Additional Constraints
0	0	Sample testcases
1	6	$n \leq 20,\ c_i = 1$
2	10	$c_i = 1$
3	20	$c_i \geq 1$
4	64	No additional constraints

Sample

Sample Input 1

```
4 10
2 3 4
3 4 0
4 5 1
1 2 5
```

Sample Output 1

```
17
```

Sample Input 2

```
5 15
3 4 3
4 5 0
2 3 5
5 10 2
1 2 0
```

Sample Output 2

```
30
```