Problem: Shopping

Time limit: 1 second
Memory limit: 32 MB

Problem Statement

Mr. Panda is going shopping! There are N different items on sale and he has a budget of D dollars to gain as much value as possible. The i-th item has a stock of S_i, which means he can buy at most S_i of that item, and Mr. Panda values it at X_i. He wants to gain as much value as possible with his budget.

However, this is the last day of the sale and they are trying to encourage customers to buy more. Hence, buying k of item i costs a total of $A_i + (k-1)B_i$ dollars for any positive integer k. Mr. Panda is very excited and he wants to quickly make purchases before the stocks run out. He needs your help to calculate what is the maximum value he can attain given his budget.

Input

The first line of the input will contain two integers, N and D.
The next N lines will each contain 4 integers. The $(i+1)$-th line contains X_i, S_i, A_i, B_i

Output

Print a single integer, representing the maximum value Mr. Panda can get with a total spending of at most D dollars.

Subtasks

Subtask	Score	Limits
1	16	$1 \leq N \leq 500, 1 \leq D \leq 750$
2	21	$S_i = 1$ for all i
3	26	$A_i = B_i$ for all i
4	37	No other restrictions

For all test cases,
$1 \leq N \leq 2000, 1 \leq D \leq 5000, 1 \leq X_i, S_i \leq 10^7, 0 \leq B_i \leq A_i \leq D$

Sample Input

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3 120
1000 3 20 10
1500 5 70 70
9000 1 20 1
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Sample Output

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12500
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Sample Explanation

Mr. Panda should buy 2 of the first item, 1 of the second item and 1 of the third item. The total cost is $30 + 70 + 20 = 120$ and the total value is $2000 + 1500 + 9000 = 12500$. He cannot buy more of the third item because there is only 1 in stock.