Luck Balance



Lena is preparing for an important coding competition that is preceded by a number of sequential preliminary contests. She believes in "saving luck", and wants to check her theory. Each contest is described by two integers, L[i] and T[i]:

- L[i] is the amount of luck associated with a contest. If Lena wins the contest, her luck balance will decrease by L[i]; if she loses it, her luck balance will increase by L[i].
- ullet T[i] denotes the contest's *importance rating*. It's equal to $oldsymbol{1}$ if the contest is *important*, and it's equal to $oldsymbol{0}$ if it's *unimportant*.

If Lena loses no more than k important contests, what is the maximum amount of luck she can have after competing in all the preliminary contests? This value may be negative.

For example, k=2 and:

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Contest L[i] T[i]
1 5 1
2 1 1
3 4 0
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If Lena loses all of the contests, her will be 5+1+4=10. Since she is allowed to lose 2 important contests, and there are only 2 important contests. She can lose all three contests to maximize her luck at 10. If k=1, she has to win at least 1 of the 2 important contests. She would choose to win the lowest value important contest worth 1. Her final luck will be 5+4-1=8.

Input Format

The first line contains two space-separated integers n and k, the number of preliminary contests and the maximum number of important contests Lena can lose.

Each of the next n lines contains two space-separated integers, L[i] and T[i], the contest's luck balance and its importance rating.

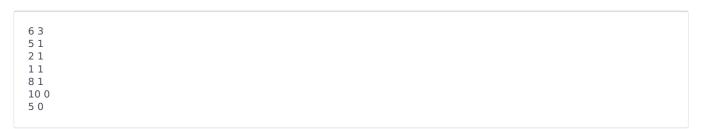
Constraints

- $1 \le n \le 100$
- $0 \le k \le N$
- $1 \le L[i] \le 10^4$
- $T[i] \in \{0,1\}$

Output Format

Print a single integer denoting the maximum amount of luck Lena can have after all the contests.

Sample Input



Sample Output

Explanation

There are n=6 contests. Of these contests, ${\bf 4}$ are important and she cannot lose more than ${\bf k}={\bf 3}$ of them. Lena maximizes her luck if she wins the ${\bf 3}^{rd}$ important contest (where L[i]=1) and loses all of the other five contests for a total luck balance of ${\bf 5}+{\bf 2}+{\bf 8}+{\bf 10}+{\bf 5}-{\bf 1}={\bf 29}$.