

# 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  $L[i]$ .
- $T[i]$  denotes the contest's *importance rating*. It's equal to **1** if the contest is *important*, and it's equal to **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:

```
Contest L[i] T[i]
1 5 1
2 1 1
3 4 0
```

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

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

## Output Format

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

## Sample Input

```
6 3
5 1
2 1
1 1
8 1
10 0
5 0
```

## Sample Output

**Explanation**

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