Problem H: Hedgehogs Communicate
Time Limit: 5 seconds

Description

Hedgehogs communicate via complex calls. Hedgehogs with better calls can communicate a longer distance. Consider **n** Hedgehogs (working together) on the X-axis, with coordinates $\mathbf{X}_i$ for $1 \le i \le \mathbf{n}$, and communication ability $\mathbf{A}_i$, then 2 hedgehogs can communicate if and only if $|\mathbf{X}_i + \mathbf{X}_j| \le \mathbf{A}_i + \mathbf{A}_j$. Exactly **k** hedgehogs are not underground looking for food, and can currently communicate and lookout for attacking Eagles. The remaining **n-k** hedgehogs are foraging for food. The units of food each hedgehog can forage underground each day is given by $\mathbf{S}_i$. Each Hedgehog that is communicating can increase their communication ability $\mathbf{A}_i$ by **D** from consuming **D** unit of food. Compute the minimal food cost on any given day for all pairs of hedgehogs to be able to communicate directly. If there is food surplus, just print a negative integer indicating negative food cost.

Input

A number of of inputs (≤**50**), each starting with two integers **n** and **k** are given ($1 \le \mathbf{k} \le \mathbf{n} \le 100000$). On each of the following **n** lines are $\mathbf{X}_i$, $\mathbf{A}_i$, $\mathbf{S}_i$ ($1 \le \mathbf{X}_i, \mathbf{A}_i, \mathbf{S}_i \le 1000000000$).

Output

For each input, output the minimal food cost (or maximal gain).
In case of a gain, the printed number should be negative.

Sample Input

```
5 3
41 632 33
131 22 43
871 32 93
1211 62 153
1593 52 21
```

Sample Output

```
412
```