Problem J. Stacking of Goods

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	128 megabytes

You are a grocery store owner, and there are n goods in your store. Each good i has an associated weight w_i, initial volume v_i, and compression coefficient c_i.

You stack all the goods into one pile to keep the store tidy. Because goods can be compressed, assuming that the sum of the weights of the items above the goods i is W (Not including itself), then after stacking, the actual volume of the goods i will become $v_i - c_i \times W$.

The space in your store is really limited, so you want to know the minimum possible value of the sum of the actual volumes of the items.

Input

The first line contains a single integer n ($1 \le n \le 10^5$), representing the number of goods.

For the following n lines, each line contains three integers w_i, v_i, c_i ($1 \le w_i \le 10^5, 1 \le v_i \le 10^{12}, 0 \le c_i < \frac{v_i}{\sum w_i}$), representing the weight, volume, and compression coefficient of the i-th good.

It's guaranteed that the actual volume of each good will never be compressed into a negative number or zero.

Output

A single integer represents the answer.

Example

standard input	standard output
3 1 8 1 2 9 2 3 10 2	16

Note

A possible optimal solution is that the order of goods in the pile from bottom to top is $1, 2, 3$. The actual volume of good 1 is $8 - 1 \times (2 + 3) = 3$; the actual volume of good 2 is $9 - 2 \times 3 = 3$; and the actual volume of good 3 is 10 since there are no other goods above it.