

B	Bobby Bloom	
	Time Limit (seconds)	1
	Memory Limit (MB)	512

Bobby just bought a huge vertical shelf to grow flowers in his tiny greenhouse. The shelf has n levels arranged from top to bottom (1 at the top, n at the bottom), and he wants to place exactly one flower on each level.

Each flower Bobby owns is a little picky and reacts differently depending on where it's placed on the shelf.

For each flower i , Bobby knows:

- s_i is how much it enjoys sunlight from above (better at the top),
- h_i is how much it likes humidity down below,
- q_i is how sensitive it is to too much humidity. If it's too low, it gets soggy and sad.

If flower i is placed on level j (with level 1 at the top), its happiness is calculated by this formula:

$$H_i = s_i \times (n - j) + h_i \times (j - 1) - q_i \times (j - 1)$$

Your job is to help Bobby arrange all the flowers on the shelf in some order to maximize total happiness.

INPUT

The first line contains one integer n ($1 \leq n \leq 10^5$) the number of flowers (and levels on the shelf).

The next n lines each contain three integers s_i , h_i , and q_i ($1 \leq s_i, h_i, q_i \leq 10^8$), the sunlight, humidity, and soggy sensitivity of flower i .

OUTPUT

Print one integer: the maximum total happiness you can achieve by placing the flowers optimally.

Input	Output
3 5 2 1 3 6 2 4 4 0	26
1 5 7 3	0
4 3 10 14 13 13 2 5 2 8 13 8 8	71

Note

In the 1st example, it is the best happiness by placing the flowers in this order: [1, 3, 2].

The first flower is in position 1: $5*2 + 2*0 - 1*0 = 10$

The second flower is in position 2: $4*1 + 4*1 - 0*1 = 8$

The third flower is in position 3: $3*0 + 6*2 - 2*2 = 8$

Total happiness will be 26.