Container

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	1024 megabytes

Rachel wants to send some parcels overseas. She has acquired a shipping container, which consists of a three-dimensional grid of length l, width w and height h. There are panels separating each pair of adjacent cells, and around the outside of the grid. Each parcel is loaded into a different cell of the grid already.

Rachel expects that during shipping her parcels will be jolted around in all directions. The panels separating the grid cells are quite weak, so it is possible that a parcel might break through a panel and move to a neighbouring cell, potentially severally times during the journey. However, the walls of the shipping container are very sturdy, so she is concerned that any package which breaches the entire grid and hits any of the six walls might be damaged. Therefore she wants to install some reinforced panels to keep the parcels contained and avoid any of them hitting the walls.

However, the reinforced panels are very expensive.

- Reinforced panels perpendicular to the length of the container cost a dollars each.
- Reinforced panels perpendicular to the width of the container cost b dollars each.
- Reinforced panels perpendicular to the height of the container cost c dollars each.

These different types of panels are coloured blue, red and yellow respectively in the diagrams below.

Help Rachel determine the minimum expense needed to keep all parcels contained within the grid.

Input

The first line of input consists of seven space-separated integers, l, w, h, a, b, c and n ($1 \leq l, w \leq 10$, $0 \leq a, b \leq 1,000,000$, $1 \leq n \leq l \times w \times h$), representing the dimensions of the grid, the costs of the different types of panels, and the number of parcels.

n lines follow, each containing three space-separated integers x, y and z ($0 \leq x < l$, $0 \leq y < w$, $0 \leq z < h$), representing the coordinates of the parcels in length, width and height respectively. No two parcels have the same coordinates.

Output

Print a single integer, the minimum cost to install reinforced panels to keep all parcels contained within the grid.

Scoring

For Subtask 1 (50 points):

- $h = 1$ and $c = 0$, i.e. the grid has unit height and reinforced panels along the top and bottom surfaces are free.

For Subtask 2 (50 points):

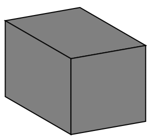
- $1 \leq h \leq 10$ and $0 \leq c \leq 1,000,000$.

Examples

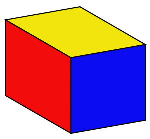
standard input	standard output
1 1 1 1 1 1 1 0 0 0	6
3 4 1 4 2 1 2 1 1 0 1 2 0	24
3 1 1 1 10 0 2 0 0 0 2 0 0	44
3 1 1 10 1 0 2 0 0 0 2 0 0	26
2 2 2 5 7 11 3 0 0 0 0 0 1 0 1 1	102

Note

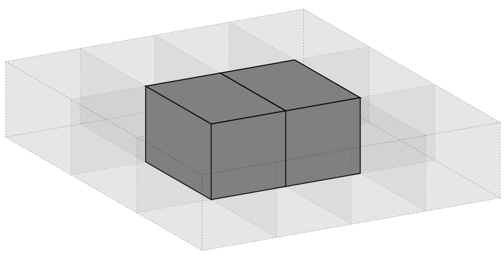
In the first sample case there is only one parcel, in the only cell of the grid.



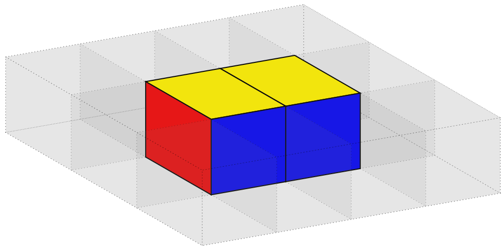
The parcel must be kept secure by installing reinforced panels above, below, left, right, in front of and behind it, and since all panels cost 1, the total cost is 6.



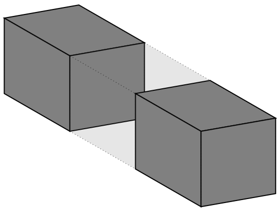
In the second sample case there are two parcels in neighbouring cells.



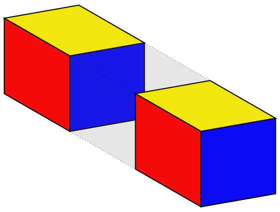
It is cheaper to join them in a $1 \times 2 \times 1$ enclosure of reinforced panels, rather than surrounding each of them individually. Rachel must install four blue panels at cost $a = 4$, two red at cost $b = 2$, and four yellow at cost $c = 1$, for a total cost of 24.



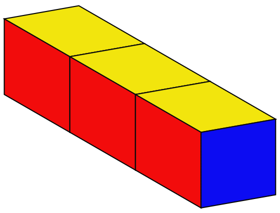
In the third sample case there are two parcels with an empty cell between them.



It is cheaper to surround each parcel on its own, as red panels (perpendicular to the width) are very expensive.



In the fourth sample case we can achieve a substantial saving by grouping the parcels together. This saves two blue panels (perpendicular to the length), at the cost of two additional panels of the other two colours.



In the fifth sample case there are three parcels in a $2 \times 2 \times 2$ grid.