Problem F. Hotel

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	512 megabytes

You are doing volunteer work for a programming competition in an ancient hotel. Unfortunately, the hotel provides no phone signal or tap water since it can be dated back to the Qin Dynasty, and you have to assign the contestants to the hotel rooms manually instead of using the internet apps. Fortunately, the hotel has sufficient rooms, and you have taken a computer that lets you do some computation locally.

There are n teams, each with exactly 3 contestants. There are 2 types of rooms in the hotel, the single room and double room, which can receive at most 1 and 2 contestants, respectively. To avoid embarrassing contestants, if two contestants are assigned to a double room, they must come from the same team and have the same gender.

The cost of each room of the same type is the same, but different types may have different costs. Your program needs to calculate the minimum price the host has to pay. The teams are waiting in the registration hall now, and the competition finance officer relies on you to save costs and make a fortune by the residual value. Be quick, or the finance officer will sue you for violating his reputation!

Input

The first line of input contains three integers n, c_1 and c_2 ($1 \le n, c_1, c_2 \le 1\,000$), denoting the number of teams, the cost of a single room and a double room respectively.

In the following n lines, each line contains a string S with exactly 3 uppercase English letters. The letters in a string denote the genders of the contestants in one team and will be represented by `A` to `Z`, respecting the diversity of human beings.

Output

The output should contain a single integer, denoting the minimum cost of hotel allocation for contestants.

Examples

standard input	standard output
3 1 3 MMM MMM FFF	9
3 3 1 ABC DEF GHI	9
10 438 438 WWW SOU PUN ETC OME CFI NAL GOO DHO TEL	12264