Problem G: Presidential Security

Filename: `security`
Timelimit: `2 seconds`

After hearing that you had attended SI@UCF Programming Competition Camp, the White House was so impressed, that they hired you to help lay out the communication network when the President traveled. The president only likes staying in hotels that have all of their rooms on each floor on a row. The rooms are numbered left to right, and no floor has more than 100 rooms, so the last two digits of each room uniquely identify where the room is within a given floor. All digits beyond the last two digits signify the floor of the room. For example, room 6287 is the 87th room from the left (starting from 0) on the 62nd floor. Unfortunately, the president doesn't travel light. His party may end up taking several rooms at a hotel and often times, to avoid suspicion, the team stays scattered throughout the hotel.

For example, consider a hotel with 4 floors and 8 rooms per floor (shown below) and the President's party staying in rooms 101, 203, 207, 402 and 406. The President would like you to set up wired communication that links all five rooms, either directly or indirectly, in the shortest time possible.

400	**401**	**402**	**403**	**404**	**405**	**406**	**407**
300	**301**	**302**	**303**	**304**	**305**	**306**	**307**
200	**201**	**202**	**203**	**204**	**205**	**206**	**207**
100	**101**	**102**	**103**	**104**	**105**	**106**	**107**

For all hotels with this layout, you've discovered that you can wire any two rooms directly and that the amount of time (in minutes) it will take you to lay a single wire between two rooms is ***a(dx) + b(dy)***, where ***a*** and ***b*** are given constants (different for each hotel) and ***dx*** represents how many rooms separate the two rooms on the x axis, which runs horizontal to the ground, and ***dy*** represents how many rooms separate the two rooms on the y axis, which runs vertically. For example, if ***a*** = 2 and ***b*** = 9, then we could connect the following sets of rooms for the hotel above:

101 and 203, time = 2(3 - 1) + 9(2 - 1) = 13
203 and 402, time = 2(3 - 2) + 9(4 - 2) = 20
203 and 207, time = 2(7 - 3) + 9(2 - 2) = 8
402 and 406, time = 2(6 - 2) + 9(4 - 4) = 8

in 13 + 20 + 8 + 8 = 49 minutes. This arrangement allows all pairs of room to communicate and all other alternate arrangements would take you equal or more time to set up as this one.

Write a program to calculate the minimum time it'll take you to set up a network the president desires for various hotels.

Input

The first line will contain a single positive integer, ***c***, (***c*** ≤ 100), specifying the number of input cases.

The first line of each input case will contain three space separated positive integers, ***n***, (***n*** ≤ 100), representing the number of rooms the President's party is taking in that hotel, ***a***, (***a*** ≤ 100) and ***b*** (***b*** ≤ 100), representing the two given constants for the hotel in the input case.

The next ***n*** lines of the input contain one positive integer, each, representing one of the room numbers in the President's party. Each of these integers is guaranteed to be distinct and in between 100 and 9999, inclusive.

Output

For each input case, on a line by itself, output the minimum number of minutes it will take you to set up the network for the president.

Samples

Input	Output
2 5 2 9 101 203 207 402 406 3 1 100 100 199 200	49 199