

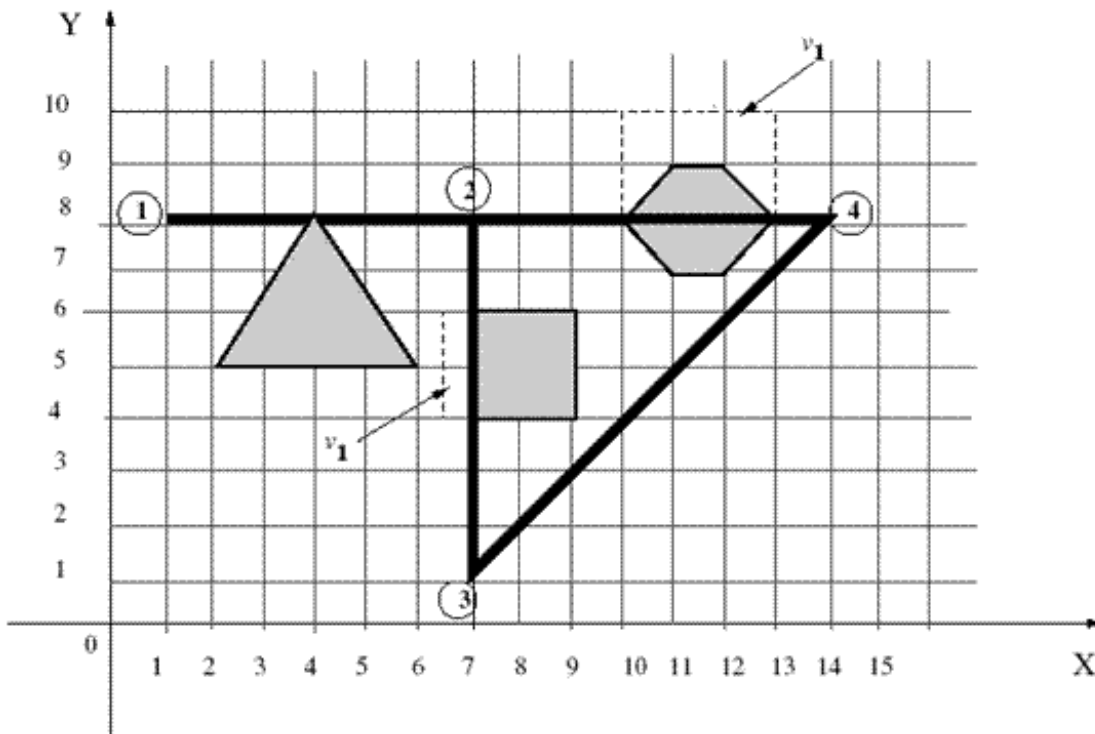
Hanoi Subway System Construction

[English](#)

[Vietnamese](#)

Hanoi is constructing a subway system. The subway system consists of M stations which are numbered from 1 to M and K two-way subway lines connecting pairs of stations directly. Hanoi metropolitan area is covered by T separated resident blocks each described as convex polygons. Subway lines can run under resident blocks. When running under resident blocks including their boundary, the speed of the subway train is v_1 while its speed is v_2 when running under other parts ($v_1 < v_2$). The travel time between two stations a and b is the shortest time to go from a to b , possibly via intermediate stations (the transit time is not significant). They now have to select the central station from those existing stations so that the travel time from the central station to the farthest station, whose travel time to the central station is longest, is shortest.

The figure below describes a subway system with four subway stations and four subway lines. There are three resident blocks in the metropolitan area. In this figure, there are two segments of subway lines under resident blocks where the subway train has to travel with speed of v_1 .



Given a subway system, your task is to write a program to find the central station and to find the travel time from the farthest station to the central station.

Input

The input file consists of several data sets. The first line of the input file contains the number of data sets which is a positive integer and is not bigger than 20. The following lines describe the data sets.

For each data set, the first line contains five integers M , K , T , v_1 , v_2 ($M < 31$, $K < 50$, $T < 10$, $0 < v_1 < v_2 < 100$) separated by space indicating number of stations, number of subway lines, number of resident blocks, the subway train speed when travelling under resident blocks, and the

subway train speed when not travelling under resident blocks respectively. The i th line of the following M lines contains two integers X_i and Y_i ($-10000 \leq X_i, Y_i \leq 10000$) separated by space representing the coordinates of the i th station. The j th line of the following K lines contains two integers separated by space representing the two stations of the j th subway line. The g th line of the following T lines contains the description of the g th resident block. The line starts with an integer V_g ($V_g < 8$) which is the number of vertices followed by V_g pairs of integers (with absolute value not exceeding 10000) separated by space indicating the coordinates of V_g vertices of the polygon in a traversal order around the polygon, representing the g th resident block.

Output

For each data set, write in one line an integer indicating the integer part of $(t_{\max} * 100)$ where t_{\max} is the travel time from the farthest station to the central station.

Example

Sample Input

```
1
4 4 3 1 2
1 8
7 8
7 1
14 8
1 2
2 3
2 4
3 4
3 4 8 6 5 2 5
4 7 6 9 6 9 4 7 4
6 10 8 11 9 12 9 13 8 12 7 11 7
```

Sample Output

```
500
```