7266 You Are Under Arrest

The police is now hunting a wanted suspect. He was spotted T ($1 \le T \le 100$) minutes ago at (x_0, y_0) , which is on a highway. However, the suspect began to escape at the same time, and as he was driving a car, he could cover V_1 miles per minute on highways.

N ($1 \le N \le 10$) highways were constructed in this city. Each of them can be considered as a straight, infinitely extending line, and you can drive can be driven on bidirectionally. Highways may intersect with each other, and it's able to transfer to any highways (and both direction) in each intersections without spending time and decreasing the speed.

The suspect may leave the highways. Once he is not on the highways, he will never enter any highway again (nevertheless, he can drive across highways without entering it), and he can drive V_0 (0.01 $\leq V_0, V_1 \leq 10, 1.2 \leq V_1/V_0 \leq 100$) miles per minute outside highways.

As the police needs to search the suspect in any possible place, they want to calculate the area that the suspect can cover. Please help them to solve this problem as a responsible citizen.

Input

The input consists of no more than 10 test cases, and it starts with a single integer indicating the number of them.

The first line of each test case contains 2 real numbers x_0 and y_0 , and the following line consists of 3 real numbers V_0 , V_1 and T. Then, a line containing N, and N lines describing highways. Each highway is specified as 4 real numbers x_1 , y_1 , x_2 , y_2 , representing a straight line passes (x_1, y_1) and (x_2, y_2) . (x_1, y_1) and (x_2, y_2) will not be the same point.

Every coordinates (x, y) given in the input satisfies $-10 \le x, y \le 10$, and metered in mile.

It's guaranteed that (x_0, y_0) lies on at least one highway. Highways don't coincide with each other, even two parallel highways will be apart for more than 0.01 miles. Further, two intersecting highways will have a separation angle for more than $\pi/40$. And, there are no more than 2 highways cross at the same point.

Output

For each test case, output your answer in a single line. Its unit should be square mile. Your answer will be considered correct if its relative error is no more than 10^{-3} .

Sample Input

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2 0 3 5 1 2 1 0 3 0 0 0 1 1 3 1 1 3 7 3 0 2 3 9 3 1 7 7 5 0 6 1
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Sample Output

36.64253903 318.22573819