

Lost Phone

Input File: lostphone.txt

You were going about your daily routine when you suddenly realize you have lost your phone. Using an app on your computer you know that your phone is a distance d away, but unfortunately, the app is terrible and does not tell you the actual location of the phone. You know of multiple places you could have lost your phone, and your job is to determine which of these places match the distance d which is mentioned by your app. All coordinates given during this problem are based on the Cartesian coordinate system.

Input:

First, you will be given the distance d , representing the distance between you and your phone. On the next line, you will be given your position in terms of (x, y) coordinates. After that, you will be given a new line containing an integer N , representing the number of following places you could have lost your phone. These next N lines will each contain the name of the location along with its position in (x, y) coordinates. x and y are both single-digit integers (1 through 9).

Output:

You will output the name of the location at which you lost your phone, using the same capitalization.

Example Input:

```
5
(5, 6)
4
Library (3, 9)
School (1, 2)
Home (9, 3)
Football Stadium (9, 2)
```

Example Output:

```
Home
```