Meteorite

Today, the LASER (**L**aboratory for **A**dvanced **S**cientific **E**mission of **R**ays) made a huge announcement - they discovered a new element. They even found out how to synthesize it: At first, you need a meteorite that is rapidly accelerating towards earth. Then you heat it up with a high-powered laser using a special focussing crystal (because lasers are totally awesome). This causes the meteorite to be rapidly condensed into one very small lump of the new element - aptly named "meteoritium".

However that process still leaves a small problem - a super dense lump of meteoritium rapidly falling through the earth's atmosphere. They now issued a safety warning to all people living close to the calculated impact site. To her excitement, Lea is among them.

She is now itching to know if there is a chance that the meteoritium will land on her parents' property (you can think of the property as a simple polygon with no intersecting edges and no holes) so she can be one of the first people on earth to see the new element.

Input

The first line of the input contains an integer t. t test cases follow, each of them separated by a blank line.

Each test case begins with a line consisting of 3 integers x_{impact}, y_{impact}, the coordinates of the calculated impact site and n, the number of sides that her parents' property has. n lines follow, each containing 4 integers x_1, y_1, x_2, y_2, describing a side of the polygon connecting the points (x_1, y_1) and (x_2, y_2).

Output

For each test case, output one line containing "Case #i: x" where i is its number, starting at 1, and x is "jackpot" if the impact site is contained in the given polygon and "too bad" otherwise. Each line of the output should end with a line break.

Constraints

- $1 \leq t \leq 20$
- $3 \leq n \leq 1000$
- $-1000 \leq x_i, y_i \leq 1000$
- Every coordinate of the polygon will have exactly 2 incident sides.
- The given polygon will always be a single, connected shape.
- (x_{impact}, y_{impact}) will never lie on a side or corner of the polygon.

Sample Input 1

```
2
1 1 3
1 0 2 2
2 2 0 1
0 1 1 0

0 1 5
-1 -1 -1 2
1 1 1 0
1 0 -1 -1
0 0 1 1
-1 2 0 0
```

Sample Output 1

```
Case #1: jackpot
Case #2: too bad
```

Sample Input 2

```
3
-3 4 10
5 0 2 -2
1 -2 0 -5
2 -2 1 -2
-2 -1 -5 -1
0 -5 -1 -1
-5 -1 -5 0
-2 3 5 0
-5 0 -2 4
-2 4 -2 3
-1 -1 -2 -1

-2 0 10
-4 -1 -5 0
-1 1 0 4
-5 0 -5 1
-5 1 -1 1
5 0 3 -4
3 -4 2 -5
0 4 4 4
-2 -1 -4 -1
4 4 5 0
2 -5 -2 -1

3 -3 9
1 3 5 0
-5 0 -5 3
5 0 1 -4
-5 3 -3 3
0 3 1 3
-3 3 0 3
-3 -2 -5 -3
-5 -3 -5 0
1 -4 -3 -2
```

Sample Output 2

```
Case #1: too bad
Case #2: jackpot
Case #3: too bad
```