

## Gophers

### Input File: Gophers.txt

Two gophers, Logan and Evie are grazing in a field that contains several gopher holes. Since gophers do not like to get wet, when it begins to rain they head for the nearest hole. The locations of each hole has been mapped using a polar coordinate system ( $r, \Theta$ ), and Logan and Evie always carry their cell phones with them that transmits their location to a GPS system in the same polar coordinate system. The azimuth angle,  $\Theta$ , of the system is measured in degrees and is positive in an anticlockwise direction, and  $r$  is measured in meters. Normally, Evie and Logan run at the same speed, 3 meters per second. However, their speed is cut in half for every gram of food they eat. Your task is to determine which gopher will reach shelter first when it begins to rain.

### Inputs

The first line of input will contain the number data sets. Each data set will contain three additional lines. The first line of a data set contains the number of gopher holes followed by the polar coordinates ( $r$  followed by  $\Theta$ ) of each hole. The second line of a data set contains Logan's location ( $r$  followed by  $\Theta$ ), followed by the grams of grass Logan has eaten. The third line of a data set contains Evie's location ( $r$  followed by  $\Theta$ ), follow by the grams of grass Evie has eaten. All inputs are integers except for the grams of grass the gophers consume.

### Outputs

Output one line per data set that contains name of the gopher that was the first to enter a hole. If Evie and Logan arrive at the hole at the same time, output "Ladies first".

### Sample inputs

```
3
3 54 180 135 45 70 290
10 35 2.0
300 90 0.0
1 100 0
100 90 0.0
100 90 0.0
10 200 45 190 270 54 180 135 45 70 290 10 300 200 55 500 75 90 285 100 0
91 285 7.0
60 140 1.8
```

### Sample output

```
Evie
Ladies first
Logan
```