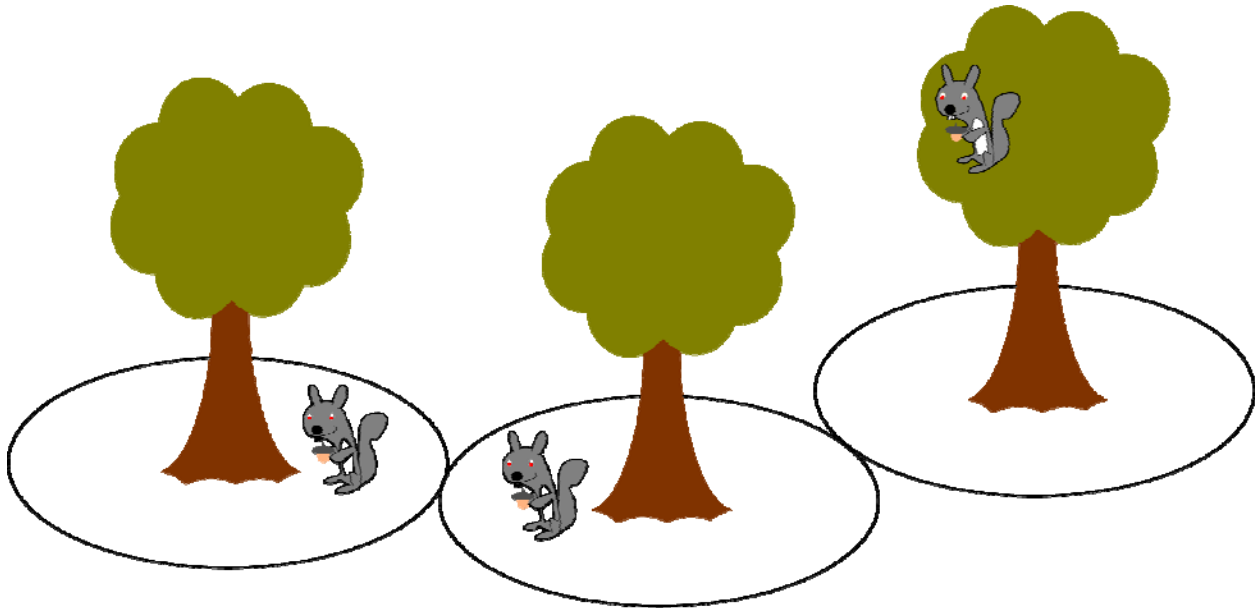# Squirrel Territory

Filename: `squirrels`

UCF squirrels are some of the fiercest and bravest squirrels ever. Don't let these ultra-cute furry critters fool you! They will steal your food and try to scare you away! Ali has become fascinated with these squirrels. After some intense study, he has found evidence that these squirrels have an elaborate system for maintaining good relations with other squirrels while allowing each squirrel to have adequate space to steal tasty treats from unsuspecting students.

Each squirrel is assigned the territory around the tree in which they live. The squirrel is allowed to move some number of *squirrel steps* in any direction away from the tree. Ali likes this as the squirrels own a circular area around each tree!

Naturally the number of squirrel steps that each squirrel is able to move can vary. To help keep the peace, the squirrels have agreed that all squirrel territories must take up the same area. Furthermore, to prevent conflict, no two squirrel territories can overlap.

The Problem:

Given the locations of trees where the squirrels live, determine the maximum area each squirrel can occupy while following the above rules. Use 3.141592653589793 for the value of π.

The Input:

The first line of input will contain an integer, c, representing the number of campuses to examine (UCF has a multitude of satellite campuses after all!). For each campus, the first line consist of a single integer, t ($2 \leq t \leq 300$), representing the number of trees on campus where squirrels live. The following t lines will contain two integers, x and y ($-3000 \leq x \leq 3000$; $-3000 \leq y \leq 3000$), representing the location (in squirrel steps) of a tree on the campus. Obviously, no two trees will be located in the same exact spot within a single campus.

The Output:

For each campus, first output "Campus #i:" where i is the current campus being examined (starting with 1). On the next line write "Maximum territory area = a" where a represents the maximum area (in squirrel steps squared, of course) that a squirrel can occupy. Output this value rounded to 3 decimal places. As an example of rounding, 14.3965 would be rounded up to 14.397, while 14.3964 would be rounded down to 14.396. Leave a blank line after the output for each campus.

Sample Input:

```
2
2
1 1
2 2
3
-1 -1
-1 1
1 1
```

Sample Output:

```
Campus #1:
Maximum territory area = 1.571

Campus #2:
Maximum territory area = 3.142
```