

Problem 18: Carrier Landing

Difficulty: Medium

Originally Published: Code Quest 2015

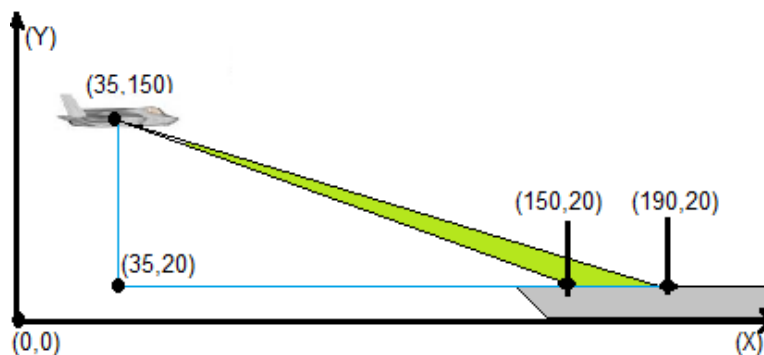


Problem Background

You are in charge of directing a state-of-the-art, fifth-generation fighter jet to a safe landing aboard the aircraft carrier USS Code Quest. If the aircraft glide-slope is too steep or too shallow, you must indicate to the pilot that he or she must abort the landing and retry. Only when the glide slopes to the targeted landing zone are within tolerances are you to indicate to the pilot that he or she may commit to the landing.

Problem Description

You must calculate the glide slopes and determine if they are within tolerance for a safe landing. If the slope of approach is between -0.8 and -1.6 (inclusive), the aircraft is clear to land – otherwise it is waved off. Because you are landing on a carrier, you must consider both the slope between the plane and the front of the landing zone as well as the slope between the plane and the end of the landing zone. Both slopes must be within tolerance for a safe landing.



Sample Input

The first line of your program's input, received from the standard input channel, will contain a positive integer representing the number of test cases. Each test case will include:

- A positive number N representing the number of aircraft sections. Each section will have four lines of input.
 - The name of the aircraft.
 - The X and Y coordinates of the aircraft separated by a comma.
 - The X and Y coordinates of the start of the landing zone separated by a comma.

- The X and Y coordinates of the end of the landing zone separated by a comma.

```
2
1
ExamplePlane
35,150
150,20
190,20
2
Freebird
25,220
150,20
190,20
Lightning
75,140
110,20
150,20
```

Sample Output

Your program should give instructions to the aircraft in the order they were encountered in the input file. For a given aircraft, there are two possible outputs:

<Aircraft Name>, Clear To Land!

Or

<Aircraft Name>, Abort Landing!

ExamplePlane, Clear To Land!

Freebird, Clear To Land!

Lightning, Abort Landing!