Problem D
Roots Intervals

Input File: D.IN
Output File: standard output
Program Source File: D.C, D.CPP, D.JAVA

Consider the function `f(x)=tan(sin(x))-sin(tan(x))+cos(x)`^{5}`-0.5` defined on the interval `[a,b]`, and `nb≥1` a series of subintervals `[x`$_i$`,x`$_{i+1}$`]`, `i=1,nb`, where `x`$_1$`=a` and `x`$_{nb+1}$`=b`. Find the number of subintervals that contain "observable" roots of `f(x)`. A root in a subinterval `[x`$_i$`,x`$_{i+1}$`]` is "observable" if the existence of that root can be decided without inspecting the behavior of `f(x)` for `x`$_i$`<x<x`$_{i+1}$, i.e. a subinterval is a black box and you cannot compute inside the interval.

The program input is from a text file. Each data set in the file stands for a particular interval `[a,b]` of `f(x)` and specifies the limits `a, b` (real numbers) and the integer number `nb` of subintervals. For each data set the program prints the number of subintervals that contain "observable" roots of `f(x)`. Each result is printed on the standard output from the beginning of a line.

White spaces can occur freely in the input. The input data are correct and terminate with an end of file. An input/output sample for the function `f(x)=1-x`^{2} is in the table bellow.

Input	Output
`-2 2 2`	`2`
`0 100 5`	`1`
`-1 1 1`	`1`