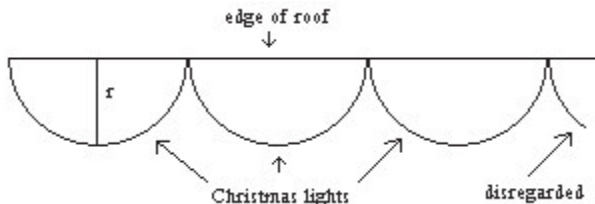# 4. Christmas Lights

Program Name: lights.java   Input File: lights.in

You have been tasked with hanging up your neighbor's Christmas lights. Your neighbor wants the lights hung in a series of half-circles from the edge of his roof:

Given the length of the string of Christmas lights and the radius of the series, determine how long the edge of a roof you will be able to decorate. Note your neighbor only wants complete half-circles in his decorations, so disregard any extra length of Christmas lights that do not form a complete half-circle.

Input
The first line of input will contain a single integer, *n*, indicating the number of data sets to process. The remainder of the input consists of those *n* data sets.

Each data set will consist of a single line containing "*r x*", where:
1. *r* is an integer (1-10000) describing the radius for the series.
2. *x* is an integer (1-10000) describing the length of the string of Christmas lights.

Note that all measurements given are in centimeters.

Output
For each data set in the input display the length (in centimeters) of the edge of the roof you are able to decorate.

Example Input File
```
2
30 3000
30 3016
```

Example Output To Screen
```
1860
1920
```