

Round 1A 2013

A. Bullseye

B. Manage your Energy

C. Good Luck

Contest Analysis

Questions asked 1



Submissions

Bullseye

11pt | Not attempted 5843/6182 users correct (95%)

13pt | Not attempted 1796/4784 users correct (38%)

Manage your Energy

12pt | Not attempted 2312/3777 users correct (61%)

23pt | Not attempted 455/1126 users correct (40%)

Good Luck

10pt Not attempted 1359/1768 users correct (77%) 31pt | Not attempted 31/605 users

correct (5%)

- Ton Scores

| - lop scores | |
|--------------|-----|
| Myth5 | 100 |
| Xhark | 100 |
| Dlougach | 100 |
| tjhance7 | 100 |
| mystic | 100 |
| wata | 100 |
| JongMan | 100 |
| dzhulgakov | 100 |
| pieguy | 100 |
| kmod | 100 |
| | |

Problem A. Bullseye

This contest is open for practice. You can try every problem as many times as you like, though we won't keep track of which problems you solve. Read the Quick-Start Guide to get started.

Small input 11 points

Solve A-small

Large input 13 points

Solve A-large

Problem

Maria has been hired by the Ghastly Chemicals Junkies (GCJ) company to help them manufacture bullseyes. A bullseye consists of a number of concentric rings (rings that are centered at the same point), and it usually represents an archery target. GCJ is interested in manufacturing black-and-white bullseyes.



Maria starts with t millilitres of black paint, which she will use to draw rings of thickness 1cm (one centimetre). A ring of thickness 1cm is the space between two concentric circles whose radii differ by 1cm.

Maria draws the first black ring around a white circle of radius ${\bf r}$ cm. Then she repeats the following process for as long as she has enough paint to do so:

- 1. Maria imagines a white ring of thickness 1cm around the last black ring.
- 2. Then she draws a new black ring of thickness 1cm around that white

Note that each "white ring" is simply the space between two black rings.

The area of a disk with radius 1cm is π cm². One millilitre of paint is required to cover area $\pi\mbox{ cm}^2.$ What is the maximum number of black rings that Maria can draw? Please note that:

- Maria only draws complete rings. If the remaining paint is not enough to draw a complete black ring, she stops painting immediately.
- There will always be enough paint to draw at least one black ring.

The first line of the input gives the number of test cases, **T**. **T** test cases follow. Each test case consists of a line containing two space separated integers: r and t.

Output

For each test case, output one line containing "Case #x: y", where x is the case number (starting from 1) and y is the maximum number of black rings that Maria can draw.

Limits

Small dataset

 $1 \leq \mathbf{T} \leq 1000$. $1 \le \mathbf{r}, \, \mathbf{t} \le 1000.$

Large dataset

 $1 \le T \le 6000$.

 $1 \le \mathbf{r} \le 10^{18}$. $1 \le \mathbf{t} \le 2 \times 10^{18}$

Sample

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