CODEFORCES
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PROBLEMS   SUBMIT CODE   MY SUBMISSIONS   STATUS   HACKS   STANDINGS   CUSTOM INVOCATION

E. Klee's SUPER DUPER LARGE Array!!!

time limit per test: 2 seconds

memory limit per test: 256 megabytes

Klee has an array a of length n containing integers $[k, k+1, \ldots, k+n-1]$ in that order. Klee wants to choose an index i $(1 \le i \le n)$ such that $x = |a_1 + a_2 + \cdots + a_i - a_{i+1} - \cdots - a_n|$ is minimized. Note that for an arbitrary integer z, $|z|$ represents the absolute value of z.

Output the minimum possible value of x.

Input

The first line contains t $(1 \le t \le 10^4)$ — the number of test cases.

Each test case contains two integers n and k $(2 \le n, k \le 10^9)$ — the length of the array and the starting element of the array.

Output

For each test case, output the minimum value of x on a new line.

Example

input	Copy

```
4
2 2
7 2
5 3
1000000000 1000000000
```

output	Copy

```
1
5
1
347369930
```

Note

In the first sample, $a = [2, 3]$. When $i = 1$ is chosen, $x = |2 - 3| = 1$. It can be shown this is the minimum possible value of x.

In the third sample, $a = [3, 4, 5, 6, 7]$. When $i = 3$ is chosen, $x = |3 + 4 + 5 - 6 - 7| = 1$. It can be shown this is the minimum possible value of x.

Codeforces Round 971 (Div. 4)

Finished

Practice

⭐

→ Virtual participation   ⌄

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

[Start virtual contest]

→ Clone Contest to Mashup   ⌄

You can clone this contest to a mashup.

[Clone Contest]

→ Submit?

Language: [GNU G++20 13.2 (64 bit, win ⌄]

Choose file: [Choose File] No file chosen

[Submit]

→ Last submissions

Submission	Time	Verdict
279636480	Sep/03/2024 19:55	Accepted

→ Problem tags

binary search   math   ternary search

*1400

No tag edit access

→ Contest materials

- Announcement (en)   ✕
- Tutorial #1 (en)   ✕
- Tutorial #2 (en)   ✕

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