B. A and B

1 second

256 megabytes

standard input

standard output

You are given two integers https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0061.png?V=2.7.5a and https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0062.png?V=2.7.5b. You can perform a sequence of operations: during the first operation you choose one of these numbers and increase it by https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.51; during the second operation you choose one of these numbers and increase it by https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0032.png?V=2.7.52, and so on. You choose the number of these operations yourself.

For example, if https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0061.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/003D.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5a=1 and https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0062.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/003D.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0033.png?V=2.7.5b=3, you can perform the following sequence of three operations:

1. add https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.51 to https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0061.png?V=2.7.5a, then https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0061.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/003D.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0032.png?V=2.7.5a=2 and https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0062.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/003D.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0033.png?V=2.7.5b=3;
2. add https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0032.png?V=2.7.52 to https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0062.png?V=2.7.5b, then https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0061.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/003D.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0032.png?V=2.7.5a=2 and https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0062.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/003D.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0035.png?V=2.7.5b=5;
3. add https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0033.png?V=2.7.53 to https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0061.png?V=2.7.5a, then https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0061.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/003D.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0035.png?V=2.7.5a=5 and https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0062.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/003D.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0035.png?V=2.7.5b=5.

Calculate the minimum number of operations required to make https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0061.png?V=2.7.5a and https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0062.png?V=2.7.5b equal.

**Input**

The first line contains one integer https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0074.png?V=2.7.5t (https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/2264.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0074.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/2264.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0030.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0030.png?V=2.7.51≤t≤100) — the number of test cases.

The only line of each test case contains two integers https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0061.png?V=2.7.5a and https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0062.png?V=2.7.5b (https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/2264.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0061.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0062.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/2264.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0030.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/283/0039.png?V=2.7.51≤a,b≤109).

**Output**

For each test case print one integer — the minimum numbers of operations required to make https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0061.png?V=2.7.5a and https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0062.png?V=2.7.5b equal.

**Example**

**input**

**Copy**

3

1 3

11 11

30 20

**output**

**Copy**

3

0

4

**Note**

First test case considered in the statement.

In the second test case integers https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0061.png?V=2.7.5a and https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0062.png?V=2.7.5b are already equal, so you don't need to perform any operations.

In the third test case you have to apply the first, the second, the third and the fourth operation to https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0062.png?V=2.7.5b (https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0062.png?V=2.7.5b turns into https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0032.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0030.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002B.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002B.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0032.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002B.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0033.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002B.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0034.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/003D.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0033.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0030.png?V=2.7.520+1+2+3+4=30).

Editorial

1. d=a-b let x be the answer
2. (x\*(x+1))/2 >= d
3. Take example d=11 and (x\*(x+1))/2=15,

1+2+3+4+5=15 we subtract 2,4,6,8… from 15 to get other numbers as we will put –ve sign in front so 15 and 11 have same parity so they are obtainable.