

Difference and Product

Tim likes Math. He likes it so much that he always brings his tablets with him and reads math e-books everywhere, even during parties.

Tim found an interesting exercise in one of the e-books he is reading. But you want him to join the party, so you decide to answer the question for him.

The problem is: Given D and P , how many ordered pairs of integers are there whose absolute difference is D and whose product is P ? In other words, how many pairs of integers (A, B) are there such that:

$$\begin{aligned} |A - B| &= D \\ A \times B &= P \end{aligned}$$

Input Format

The first line of input contains T , the number of test cases. The next T lines describe the test cases.

Each test case consists of a single line containing two integers D and P separated by a single space.

Output Format

For each test case, output a single line containing a single integer which is the answer for that test case.

Constraints

$$\begin{aligned} 1 &\leq T \leq 20000 \\ |D| &\leq 10^9 \\ |P| &\leq 10^9 \end{aligned}$$

Sample Input

```
3
1 2
0 4
-1 1
```

Sample Output

```
4
2
0
```

Explanation

Case 1: There are four pairs of integers with absolute difference 1 and product 2, namely (1, 2), (2, 1), (−1, −2), (−2, −1).

Case 2: There are two pairs of integers with absolute difference 0 and product 4, namely (2, 2), (−2, −2).

Case 3: There are no pairs of integers with absolute difference −1, because the absolute value is never negative.

