

3501 Sequence Sum Possibilities

Most positive integers may be written as a sum of a sequence of at least two consecutive positive integers. For instance,

$$6 = 1 + 2 + 3$$

$$9 = 5 + 4 = 2 + 3 + 4$$

but 8 cannot be so written.

Write a program which will compute how many different ways an input number may be written as a sum of a sequence of at least two consecutive positive integers.

Input

The first line of input will contain the number of problem instances N on a line by itself, ($1 \leq N \leq 1000$). This will be followed by N lines, one for each problem instance. Each problem line will have the problem number, a single space and the number to be written as a sequence of consecutive positive integers. The second number will be less than 2^{31} (so will fit in a 32-bit integer).

Output

The output for each problem instance will be a single line containing the problem number, a single space and the number of ways the input number can be written as a sequence of consecutive positive integers.

Sample Input

```
7
1 6
2 9
3 8
4 1800
5 987654321
6 987654323
7 987654325
```

Sample Output

```
1 1
2 2
3 0
4 8
5 17
6 1
7 23
```