A group of archaeologists have come across a new kind of number pattern while analyzing the hieroglyphs patterns in 'The not so great pyramid'. They have decided to call these numbers 'Pyramid numbers'.

A number n is called a Pyramid number if we can partition n into k positive integers x_i $(1 \leq i \leq k)$ such that

$$\sum_{i=1}^{k} \frac{1}{x_i} = 1. \text{ For example, } 1 = \frac{1}{2} + \frac{1}{2}$$

So, 4 (2 + 2) is a Pyramid number.

A number n is called a Strictly Pyramid number if we can partition n into k distinct positive integers x_i $(1 \leq i \leq k)$ such that

$$\sum_{i=1}^{k} \frac{1}{x_i} = 1. \text{ For example, } 1 = \frac{1}{2} + \frac{1}{3} + \frac{1}{6}$$

Here, 11 (2 + 3 + 6) is Strictly Pyramid whereas in the above example, 4 is Pyramid but not Strictly Pyramid.

Given two positive integers a & b, find the number of Strictly Pyramid numbers between a & b (inclusive).

Input

The first line of the input file will contain an integer T $(T \leq 100)$, the number of test cases. Each of the following T lines will be consisting of 2 integers a & b $(1 \leq a, b \leq 1000000)$.

Output

For each test case, print an integer which is the number of Strictly Pyramid numbers between a & b (inclusive).

Sample Input

```
5
1 10
1 11
1 100
70 80
110 120
```

Sample Output

```
1
2
53
8
11
```