

---

## Happy Range

X78898\_en

---

Welcome to the world of happy numbers. In this world, only digits 4 and 7 are happy while the rest are unhappy, so happy numbers are those composed of 4s and 7s, e.g. 123456 and 4749 are unhappy but 774 and 4747 are happy numbers.

Given two numbers  $A$  and  $B$ , print the amount of happy numbers in the range  $[A, B]$  such that  $0 \leq A < B \leq 10^9$ .

### Input

The input starts with the number of test cases  $T \leq 1000$ . For each test case, there are two integers  $A$  and  $B$  that corresponds to range where we have to look for happy numbers.

### Output

For each test case, output the total number of happy numbers in the range  $[A, B]$ .

### Sample input

```
2
1 10
44 450
```

### Sample output

```
2
6
```

In the first example, in  $[1, 10]$  only 4 and 7 are happy so the answer is 2.

In the second example, in  $[44, 450]$ , the happy numbers are 44, 47, 74, 77, 444 and 447 so the answer is 6.

### Problem information

Author : Javier Segovia

Generation : 2017-06-06 14:52:48

© Jutge.org, 2006–2017.

<http://jutge.org>