Problem J. Ten Ranges

Input file:	*standard input*
Output file:	*standard output*
Time limit:	2 seconds
Memory limit:	512 mebibytes

An integer x is called a *decimal subsequence* of an integer y if the decimal representation of x can be obtained from the decimal representation of y by erasing some digits (possibly none, but not all).

An integer x is called a prime if $x \geq 2$ and its only positive integer divisors are 1 and x.

An integer x is called *secondary* if there is no integer y such that y is a decimal subsequence of x and y is a prime. For example, 168 is secondary as none of 1, 6, 8, 16, 18, 68, 168 is a prime, while 169 is not secondary as 19 is a prime.

Find the number of secondary integers in each of the given ranges $[l; r]$.

Input

The first line of the input contains a single integer n ($1 \leq n \leq 10$), denoting the number of ranges.

Each of the following n lines contains two integers l and r ($1 \leq l \leq r \leq 10^{18}$), denoting the boundaries of the range.

Output

Display the number of secondary integers in each of the given ranges, in order of input.

Example

standard input	standard output
3 8 16 157 174 42 239	5 4 36

Note

In the example test case, secondary integers belonging to $[8; 16]$ are 8, 9, 10, 14, and 16, and secondary integers belonging to $[157; 174]$ are 160, 164, 166, and 168.