$50 \times 50 \neq 250$ **P21459_en**

Desè Concurs de Programació de la UPC - Final (2012-09-15)

In the ACM-ICPC World Finals 2012, the UPC team made as usual a nice set of mistakes. One of them was the original assumption that $50 \times 50 = 250$. Observe that this equation has two interesting properties:

1. The right-hand side of the equation is the result of removing one digit from the real result (in the example, 2500).

2. At least one of the two numbers of the left-hand side of the equation has at least one digit such that, if removed, makes the equation correct (in the example, $5 \times 50 = 250$).

Let us call an equation $x \times y = z$ a *fail* when it fulfills properties 1 and 2, and an *epic fail* when it only fulfills property 1. For instance, $50 \times 50 = 200$ is an epic fail. Please write a program to count the number of fails and epic fails that the UPC teams can make at the ACM-ICPC World Finals. (The real number is of course ∞, but let us use the simplifications of the statement.)

Input

Input consists of several cases. Every case has two numbers x and y with the same number of digits n. Those numbers can have leading zeroes. Assume $2 \leq n \leq 1000$.

Output

For every case, print the number of different fails and epic fails of the kind $x \times y = z$. Note that z must have length exactly $2n - 1$, if necessary by adding leading zeroes.

Sample input

```
50 50
002 003
9999 9999
0000 0000
100 111
0123456789 9876543210
21212121212121 40000000000000
```

Sample output

```
1 2
2 0
0 4
1 0
2 1
2 16
15 1
```

Problem information

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