1651 Binary Operation

Consider a binary operation $\odot$ defined on digits 0 to 9,

$$\odot : \{0, 1, \ldots, 9\} \times \{0, 1, \ldots, 9\} \rightarrow \{0, 1, \ldots, 9\}$$

such that $0 \odot 0 = 0$.

A binary operation $\otimes$ is a generalization of $\odot$ to the set of non-negative integers,

$$\otimes : \mathbb{Z}_{0+} \times \mathbb{Z}_{0+} \rightarrow \mathbb{Z}_{0+}$$

The result of $a \otimes b$ is defined in the following way: if one of the numbers a and b has fewer digits than the other in decimal notation, then append leading zeroes to it, so that the numbers are of the same length; then apply the operation digit-wise to the corresponding digits of a and b.

$$\otimes\begin{array}{r}5566\\239\\\hline ????\end{array} \longrightarrow \otimes\begin{array}{r}5566\\0239\\\hline ????\end{array} \longrightarrow \odot\begin{array}{c}5\\0\\\hline 0\end{array}\odot\begin{array}{c}5\\2\\\hline 0\end{array}\odot\begin{array}{c}6\\3\\\hline 8\end{array}\odot\begin{array}{c}6\\9\\\hline 4\end{array} \longrightarrow \otimes\begin{array}{r}5566\\0239\\\hline 0084\end{array} \longrightarrow \otimes\begin{array}{r}5566\\239\\\hline 84\end{array}$$

Example. If $a \odot b = ab \bmod 10$, then $5566 \otimes 239 = 84$.

Let us define $\otimes$ to be left-associative, that is, $a \otimes b \otimes c$ is to be interpreted as $(a \otimes b) \otimes c$.

Given a binary operation $\odot$ and two non-negative integers a and b, calculate the value of

$$a \otimes (a + 1) \otimes (a + 2) \otimes \ldots \otimes (b - 1) \otimes b$$

Input

The input file contains several test cases, each of them as described below.

The first ten lines of the input file contain the description of the binary operation $\odot$. The i-th line of the input file contains a space-separated list of ten digits — the j-th digit in this list is equal to $(i - 1) \odot (j - 1)$.

The first digit in the first line is always 0.

The eleventh line of the input file contains two non-negative integers a and b ($0 \leq a \leq b \leq 10^{18}$).

Output

For each test case, output on a line by itself a single number — the value of $a \otimes (a + 1) \otimes (a + 2) \otimes \ldots \otimes (b - 1) \otimes b$ without extra leading zeroes.

Sample Input

```
0 1 2 3 4 5 6 7 8 9
1 2 3 4 5 6 7 8 9 0
2 3 4 5 6 7 8 9 0 1
3 4 5 6 7 8 9 0 1 2
4 5 6 7 8 9 0 1 2 3
5 6 7 8 9 0 1 2 3 4
6 7 8 9 0 1 2 3 4 5
7 8 9 0 1 2 3 4 5 6
8 9 0 1 2 3 4 5 6 7
9 0 1 2 3 4 5 6 7 8
0 10
```

Sample Output

```
15
```