

In this problem you will be given two decimal integer number N , M . You will have to find the last non-zero digit of the P_M^N . This means no of permutations of N things taking M at a time.

Input

The input file contains several lines of input. Each line of the input file contains two integers N ($0 \leq N \leq 20000000$), M ($0 \leq M \leq N$). Input is terminated by end-of-file.

Output

For each line of the input file you should output a single digit, which is the last non-zero digit of P_M^N . For example, if P_M^N is 720 then the last non-zero digit is 2. So in this case your output should be 2.

Sample Input

```
10 10
10 5
25 6
```

Sample Output

```
8
4
2
```