

## 10515 Power et al.

Finding the exponent of any number can be very troublesome as it grows exponentially. But in this problem you will have to do a very simple task. Given two non-negative numbers  $m$  and  $n$ , you will have to find the last digit of  $m^n$  in decimal number system.

### Input

The input file contains less than 100000 lines. Each line contains two integers  $m$  and  $n$  (Less than  $10^{101}$ ). Input is terminated by a line containing two zeroes. This line should not be processed.

### Output

For each set of input you must produce one line of output which contains a single digit. This digit is the last digit of  $m^n$ .

### Sample Input

```
2 2
2 5
0 0
```

### Sample Output

```
4
2
```