SPOJ Problem Set

3442. The last digit

Problem code: LASTDIG

Nestor was doing the work of his math class about three days but he is tired of make operations a lot and he should deliver his task tomorrow. His math's teacher gives two numbers a and b. The problem consist in find the last digit of the potency of base a and index b. Help Nestor with his problem. You are given two integer numbers: the base a (0 < a < 20) and the index b (0 <= b <= 2,147,483,000). You have to find the last digit of a^b.

Input

The first line of input contains an integer t, the number of test cases (t <= 30). t test cases follow. For each test case will appear a and b separated by space.

Output

For each test case output an integer per line representing the result.

Example

```
Input:
2
3 10
6 2

Output:
9
6
```

Added by: Jose Daniel Rdguez
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Time limit: 1s
Source limit:700B
Languages: All
Resource: Mine