

Last Digit of Power

Given two numbers a and b . Find the last digit of a^b . (a to the power b)

Input

There will be t ($1 \leq t \leq 10$) testcases. In each case there will be two number a ($1 \leq a \leq 10^{100000}$) and b ($1 \leq b \leq 10^{100000}$) separated by a space.

Output

Print the last digit of a^b in a single line.

Sample Input:

2

3 10

6 2

Sample Output:

9

6