Big Mod

Calculate

$$R := B^P \bmod M$$

for large values of *B*, *P*, and *M*
using an efficient algorithm. (That's right, this problem has a time dependency !!!.)

Input

Three integer values (in the order *B*, *P*, *M*) will be read one number per line. *B* and *P* are integers in the range 0 to 2147483647 inclusive. *M* is an integer in the range 1 to 46340 inclusive.

Output

The result of the computation. A single integer.

Sample Input

```
3
18132
17

17
1765
3

2374859
3029382
36123
```

Sample Output

```
13
2
13195
```