Factorial formula

Enter the positive integer *n*. Calculate and print out *n*! step by step.

Input

The first line of the input consist of a single integer number *t* which determines the number of tests.

In each of next *t* lines will contain only one positive integer *n*.

Constraints

- $0 < t \le 1\,000$

Output

For each test case print out *n*! step by step.

Example

Input:
```
5
0
5
9
-3
1
```

Output:
```
0!=1
5!=1*2*3*4*5=120
9!=1*2*3*4*5*6*7*8*9=362880
accept positive integer only!
1!=1
```