1289 - LCM from 1 to n

Given an integer n, you have to find

1cm means least common multiple. For example lcm(2, 5, 4) = 20, lcm(3, 9) = 9, lcm(6, 8, 12) = 24.

Input

Input starts with an integer T (\leq 10000), denoting the number of test cases.

Each case starts with a line containing an integer $n \ (2 \le n \le 10^8)$.

Output

For each case, print the case number and lcm(1, 2, 3, ..., n). As the result can be very big, print the result modulo 2^{32} .

Sample Input	Output for Sample Input
5	Case 1: 2520
10	Case 2: 60
5	Case 3: 2300527488
200	Case 4: 360360
15	Case 5: 232792560
20	