

1289 – LCM from 1 to n

Given an integer **n**, you have to find

lcm(1, 2, 3, ..., n)

lcm means least common multiple. For example $\text{lcm}(2, 5, 4) = 20$, $\text{lcm}(3, 9) = 9$, $\text{lcm}(6, 8, 12) = 24$.

Input

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

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

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	