1090 – Trailing Zeroes (II)

Find the number of trailing zeroes for the following function:

$$^{n}C_{r} * p^{q}$$

where **n, r, p, q** are given. For example, if **n = 10, r = 4, p = 1, q = 1**, then the number is **210** so, number of trailing zeroes is 1.

Input

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

Each case contains four integers: **n, r, p, q (1 ≤ n, r, p, q ≤ 10^6, r ≤ n)**.

Output

For each test case, print the case number and the number of trailing zeroes.

Sample Input	Output for Sample Input
2 10 4 1 1 100 5 40 5	Case 1: 1 Case 2: 6