1236 – Pairs Forming LCM

Find the result of the following code:

```
long long pairsFormLCM( int n ) {
    long long res = 0;
    for( int i = 1; i <= n; i++ )
        for( int j = i; j <= n; j++ )
           if( lcm(i, j) == n ) res++; // lcm means least common multiple
    return res;
}
```

A straight forward implementation of the code may time out. If you analyze the code, you will find that the code actually counts the number of pairs **(i, j)** for which **lcm(i, j) = n** and **(i ≤ j)**.

Input

Input starts with an integer **T (≤ 200)**, denoting the number of test cases.

Each case starts with a line containing an integer **n (1 ≤ n ≤ 10^{14})**.

Output

For each case, print the case number and the value returned by the function **'pairsFormLCM(n)'**.

Sample Input	Output for Sample Input
15 2 3 4 6 8 10 12 15 18 20 21 24 25 27 29	Case 1: 2 Case 2: 2 Case 3: 3 Case 4: 5 Case 5: 4 Case 6: 5 Case 7: 8 Case 8: 5 Case 9: 8 Case 10: 8 Case 11: 5 Case 12: 11 Case 13: 3 Case 14: 4 Case 15: 2