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LCM Summation

locked

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Given n , calculate the sum $LCM(1,n) + LCM(2,n) + \dots + LCM(n,n)$, where $LCM(i,n)$ denotes the Least Common Multiple of the integers i and n .

Input Format

The first line contains T the number of test cases. Each of the next T lines contain an integer n .

Constraints

- $1 \leq T \leq 300000$
- $1 \leq n \leq 1000000$

Output Format

Output T lines, one for each test case, containing the required sum.

Sample Input 0

```
3
1
2
5
```

Sample Output 0

```
1
4
55
```

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```
1 #include <stdio.h>
2 #include <string.h>
3 #include <math.h>
```

```
4 #include <stdlib.h>
5
6 int main() {
7
8     /* Enter your code here. Read input from STDIN. Print output to STDOUT */
9     return 0;
10 }
```

Line: 1 Col: 1

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