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DIVSUM - Divisor Summation

#number-theory (/problems/tag/number-theory)

Given a natural number n (1 <= n <= 500000), please output the summation of all its proper divisors.

Definition: A proper divisor of a natural number is the divisor that is strictly less than the number.

e.g. number 20 has 5 proper divisors: 1, 2, 4, 5, 10, and the divisor summation is: 1 + 2 + 4 + 5 + 10 = 22.

Input

An integer stating the number of test cases (equal to about 200000), and that many lines follow, each containing one integer between 1 and 500000 inclusive.

Output

One integer each line: the divisor summation of the integer given respectively.

Example

```
Sample Input:
3
2
10
20

Sample Output:
1
8
22
```

Warning: large Input/Output data, be careful with certain languages

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Date:	2004-06-10
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