

Project Euler #21: Amicable numbers

Problem Statement

This problem is a programming version of [Problem 21](#) from [projecteuler.net](#)

Let $d(n)$ be defined as the sum of proper divisors of n (numbers less than n which divide evenly into n).
If $d(a) = b$ and $d(b) = a$, where $a \neq b$, then a and b are an amicable pair and each of a and b are called amicable numbers.

For example, the proper divisors of 220 are 1, 2, 4, 5, 10, 11, 20, 22, 44, 55 and 110 therefore $d(220) = 284$. The proper divisors of 284 are 1, 2, 4, 71 and 142 so $d(284) = 220$.

Evaluate the sum of all the amicable numbers under N .

Input Format

The first line contains an integer T , i.e., number of test cases.

Next T lines will contain an integer N .

Output Format

Print the values corresponding to each test case.

Constraints

$$1 \leq T \leq 1000$$

$$1 \leq N \leq 10^5$$

Sample Input

```
1
300
```

Sample Output

```
504
```