

Project Euler #21: Amicable numbers

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 .

Constraints

- $1 \leq T \leq 1000$
- $1 \leq N \leq 10^5$

Output Format

Print the values corresponding to each test case.

Sample Input

```
1
300
```

Sample Output

```
504
```

Explanation

Under **300** we only have **220** and **284**, sum is **504**