22 Simply perfect

8 points

Introduction

In number theory a positive integer is called "perfect" if it is equal to the sum of its proper positive divisors, excluding the number itself (also known as its *aliquot sum*), that is:

$$sum\big(div(n)\big) = n$$

If a number is not perfect, it can be deficient ($sum\big(div(n)\big) < n$) or abundant ($sum\big(div(n)\big) > n$).
You have to write a program that determines if a number is perfect, deficient of abundant.

Input

The input of the program is a list of positive integers, ending with a 0.

```
3
6
28
412
198
0
```

Output

The program must output whether each integer is perfect, deficient or abundant.

```
3 is deficient
6 is perfect
28 is perfect
412 is deficient
198 is abundant
```