Practice Exercise #17: Perfect Number

http://www.comp.nus.edu.sg/~cs1010/4_misc/practice.html

Reference: Week 4

Date of release: 1 September 2014

Objectives: Revision: Writing function, repetition and selection statements

Task statement:

A *perfect number* is a positive integer that is the sum of its proper positive divisors. A proper positive divisor of a number is a positive integer smaller than the number and divides the number. For example, the positive divisors of 20 are 1, 2, 4, 5, 10 and 20; all except 20 are proper positive divisors of 20.

For example, 6 is a perfect number because 6 = 1 + 2 + 3, but 8 and 100 are not, because $8 \neq 1 + 2 + 4$, and $100 \neq 1 + 2 + 4 + 5 + 10 + 20 + 25 + 50$.

Write a program **perfectNumber.c** that asks user repeatedly for a non-negative integer, and stops when the number is zero. For each positive integer entered, your program is to check whether it is a perfect number or not.

Your program should have a function **is_perfect(int)** that returns 1 if the argument is a perfect number, or 0 otherwise.

Sample run:

```
Enter number: 6
6 is a perfect number.
Enter number: 8
8 is not a perfect number.
Enter number: 100
100 is not a perfect number.
Enter number: 0
```