Problem B

Perfect Number

Time limit: 1 second
Memory: 1024 megabytes

Problem Description

In an ancient kingdom, mathematicians were highly interested in special numbers. One of the types of numbers considered mystical and of great interest to them was the perfect number. According to legend, a positive integer is called a perfect number if the sum of all its divisors, excluding itself, equals the number itself.

For example, the number **6** is a perfect number because its divisors (excluding itself) are **1**, **2**, and **3**, and their sum is **1 + 2 + 3 = 6**. On the other hand, the number **5** only has one divisor, which is **1**, and **1** is not equal to **5**, so **5** is not a perfect number.

The legend says that whenever a perfect number is found, prosperity will come to the kingdom. Kings often ask mathematicians to check whether a given number is a perfect number, with the hope of maintaining prosperity and wealth.

However, with the kingdom's growth, the numbers are getting larger and more complex, making the task of checking perfect numbers more difficult than ever. The mathematicians need an automatic tool to help them perform this task quickly and accurately.

Your task: Write a program to check whether a given positive integer **N**, assigned by the king, is a perfect number or not.

Input:

- The first line contains an integer **Q**, representing the number of queries ($\mathbf{1 \leq Q \leq 10^5}$).
- The next **Q** lines each contain a single integer **N** ($\mathbf{1 \leq N \leq 2 \times 10^{11}}$).

Output:

- For each query, print **YES** if the number is a perfect number, otherwise print **NO**.

Example:

INPUT	OUTPUT
2 5 6	NO YES