
Is it a power?**P51271_en**

Write a program to tell if a natural number n is a non-trivial power, that is, if it can be expressed as x^m , where both x and m are natural numbers, and $m \geq 2$. For instance, some non-trivial powers are $243 = 3^5$, $400 = 2^45^2 = (2^25^1)^2$, $216000 = 2^63^35^3 = (2^23^15^1)^3$, and $1866240000 = 2^{12}3^65^4 = (2^63^35^2)^2$. By contrast, 3 , $200 = 2^35^2$, and $432000 = 2^73^35^3$ are not non-trivial powers.

Input

Input consists of several cases, each with a natural number n between 2 and 10^6 .

Output

Print every n followed by “yes” or “no”, depending on whether it is a non-trivial power.

Observation

You should not use the mathematical function `@pow()` nor any alike function to solve this problem.

Hint

A possible solution uses a variant of the sieve of Eratosthenes to precompute a prime factor of each number before starting to read the input.

Problem information

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