A. Cows and Primitive Roots

time limit per test: 2 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

The cows have just learned what a primitive root is! Given a prime p, a primitive root is an integer x $(1 \leq x < p)$ such that none of integers x - $1, x^2$ - $1, ..., x^{p-2}$ - 1 are divisible by p, but x^{p-1} - 1 is.

Unfortunately, computing primitive roots can be time consuming, so the cows need your help. Given a prime p, help the cows find the number of primitive roots .

Input

The input contains a single line containing an integer p $(2 \leq p < 2000)$. It is guaranteed that p is a prime.

Output

Output on a single line the number of primitive roots .

Examples

input
3
output
1

input
5
output
2

Note

The only primitive root is 2.

The primitive roots are 2 and 3.