

Problem B. Cows and Primitive Roots

Time limit 2000 ms

Mem limit 262144 kB

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

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 $\bmod p$.

Sample 1

Input	Output
3	1

Sample 2

Input	Output
5	2

Note

The only primitive root $\bmod 3$ is 2.

The primitive roots $\bmod 5$ are 2 and 3.