**Primitive Roots**

|  |  |  |
| --- | --- | --- |
| **Time Limit:** 1000MS |  | **Memory Limit:** 10000K |
|  |  |  |

**Description**

We say that integer x, 0 < x < p, is a primitive root modulo odd prime p if and only if the set { (xi mod p) | 1 <= i <= p-1 } is equal to { 1, ..., p-1 }. For example, the consecutive powers of 3 modulo 7 are 3, 2, 6, 4, 5, 1, and thus 3 is a primitive root modulo 7.   
Write a program which given any odd prime 3 <= p < 65536 outputs the number of primitive roots modulo p.

**Input**

Each line of the input contains an odd prime numbers p. Input is terminated by the end-of-file seperator.

**Output**

For each p, print a single number that gives the number of primitive roots in a single line.

**Sample Input**

23

31

79

**Sample Output**

10

8

24

**Source**

[贾怡@pku](http://poj.org/searchproblem?field=source&key=%E8%B4%BE%E6%80%A1%40pku)