

# 10299 Relatives

Given  $n$ , a positive integer, how many positive integers less than  $n$  are relatively prime to  $n$ ? Two integers  $a$  and  $b$  are relatively prime if there are no integers  $x > 1$ ,  $y > 0$ ,  $z > 0$  such that  $a = xy$  and  $b = xz$ .

## Input

There are several test cases. For each test case, standard input contains a line with  $n \leq 1,000,000,000$ . A line containing '0' follows the last case.

## Output

For each test case there should be single line of output answering the question posed above.

## Sample Input

7  
12  
0

## Sample Output

6  
4

