Relative Primes:

One day Anne is studying numbers and wonders if there is some way to tell for some positive integer n, how many positive integers less than n are relatively prime to n.

A number x is said to be relatively prime to a number y if x and y have no common prime factors.

For example the number 9 has 6 positive integers which are less than it which are relatively prime to it 1, 2, 4, 5, 7, and 8.

Note that since 1 is not considered prime, it is relatively prime to every positive integer.

Write a program which is able to take some number n and return how many numbers less than n are relatively prime to n.

Input:

First a line with a number T, the number of Test cases.

T lines follow each with a number n, the number to calculate how many positive integers are less than and relatively prime.

Output:

For each number n, on a new line for each value, the number of positive integers which are less than and relatively prime to the corresponding input line T.

Constraints:

T = 5000

2 <= n < 10000000

Sample Input:

4

9

24

50

32161295

Sample Output:

6

8

20

25403040