Patting Heads

It's Bessie's birthday and time for party games! Bessie has instructed the N ($1 \leq N \leq 100,000$) cows conveniently numbered 1..N to sit in a circle (so that cow i [except at the ends] sits next to cows i-1 and i+1; cow N sits next to cow 1). Meanwhile, Farmer John fills a barrel with one billion slips of paper, each containing some integer in the range 1..1,000,000.

Each cow i then draws a number A_i ($1 \leq A_i \leq 1,000,000$) (which is not necessarily unique, of course) from the giant barrel. Taking turns, each cow i then takes a walk around the circle and pats the heads of all other cows j such that her number A_i is exactly divisible by cow j's number A_j; she then sits again back in her original position.

The cows would like you to help them determine, for each cow, the number of other cows she should pat.

Input

- Line 1: A single integer: N.
- Lines 2..N+1: Line i+1 contains a single integer: A_i.

Output

- Lines 1..N: On line i, print a single integer that is the number of other cows patted by cow i.

Example

Input:
5
2
1
2
3
4

Output:
2
0
2
1
3

The first cow pats the second and third cows; the second cows pats no cows; etc.