Rnumber

In this problem your task is to reduce a given number 'N' to a non-positive number in as little moves as possible. The moves allowed are : Given an integer 'N' you can subtract one of its factors (excluding 'N' itself) from 'N' and continue the same process with the resulting number until you reach a non-positive number

Input

First line contains the number of test cases 'T'. 'T' lines follow containing a single integer 'N' 2<=N<100,000.

Output

A single integer denoting the minimum number of moves necessary.

Example

Input:
1
10

Output:
5