Problem L. Non-Prime Factors

Time limit	1000 ms
Mem limit	1048576 kB
OS	Linux

In many programming competitions, we are asked to find (or count the number of) Prime Factors of an integer i. This is boring. This time, let's count the number of Non-Prime Factors of an integer i, denoted as `NPF(i)`.

For example, integer 100 has the following nine factors: $\{1, \underline{2}, 4, \underline{5}, 10, 20, 25, 50, 100\}$. The two which are underlined are prime factors of 100 and the rest are non-prime factors. Therefore, `NPF(100)` = 7.

Input

The first line contains an integer Q ($1 \leq Q \leq 3 \cdot 10^6$) denoting the number of queries. Each of the next Q lines contains one integer i ($2 \leq i \leq 2 \cdot 10^6$).

Output

For each query i, print the value of `NPF(i)`.

Warning

The I/O files are large. Please use fast I/O methods.

Sample 1

Input	Output
4 100 13 12 2018	7 1 4 2