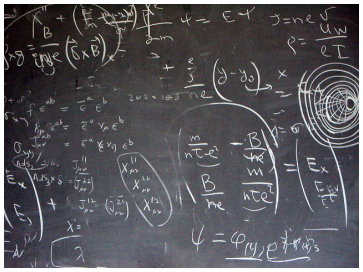
C Collatz Conjecture



Picture by mscolly via Flickr.

In 1978 AD the great Sir Isaac Newton, whilst proving that $\mathcal{P}$ is a strict superset of $\mathcal{NP}$, defined the Beta Alpha Pi Zeta function f as follows over any sequence of positive integers $a_1, \ldots, a_n$. Given integers $1 \leq i \leq j \leq n$, we define $f(i, j)$ as $\gcd(a_i, a_{i+1}, \ldots, a_{j-1}, a_j)$.

About a century later Lothar Collatz applied this function to the sequence $1, 1, 1, \ldots, 1$, and observed that f always equalled 1. Based on this, he conjectured that f is always a constant function, no matter what the sequence a_i is. This conjecture, now widely known as the Collatz Conjecture, is one of the major open problems in botanical studies. (The Strong Collatz Conjecture claims that however many values f takes on, the real part is always $\frac{1}{2}$.)

You, a budding young cultural anthropologist, have decided to disprove this conjecture. Given a sequence a_i, calculate how many different values f takes on.

Input

The input consists of two lines.

- A single integer $1 \leq n \leq 5 \cdot 10^5$, the length of the sequence.
- The sequence $a_1, a_2, \ldots, a_n$. It is given that $1 \leq a_i \leq 10^{18}$.

Output

Output a single line containing a single integer, the number of distinct values f takes on over the given sequence.

Sample Input 1	Sample Output 1
4 9 6 2 4	6

Sample Input 2	Sample Output 2
4 9 6 3 4	5

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