ECOO '07 R3 P1 - Sum of Primes

Time limit: 2.5s   **Memory limit:** 256M

Any natural number $N > 4$ can be expressed as the sum of 1, 2 or 3 odd primes. If N itself is a prime, only one number is required.

However, because there are so many solutions for large composite N, it is your task to find the solution $N = p + q$ where $p \leq q$ are prime, and where p is as large as possible, or, if N cannot be expressed as the sum of two primes, find the solution $N = p + q + r$ where $p \leq q \leq r$ are prime and where p is as large as possible, followed by where q is as large as possible.

Examples

10	49
$10 = 3 + 7$	$49 = 13 + 13 + 23$
$10 = 5 + 5$	$49 = 13 + 17 + 19$

5 is larger than 3 and so, the required solution is $10 = 5 + 5$.

In this case, 17 is larger than 13, and so the required solution is $49 = 13 + 17 + 19$.

The input contains 5 numbers on 5 separate lines. These numbers are less than $10\,000\,000$ and larger than 4. Write a program that will find the sum of primes for each of these numbers as described, and display the result as is shown in the sample below.

Sample Input

```
49
152029
90118
4565973
705510
```

Sample Output

```
49 = 13 + 17 + 19
152029 = 152029
90118 = 44987 + 45131
4565973 = 1521991 + 1521991 + 1521991
705510 = 352753 + 352757
```