play with prime numbers (I)

A prime number is a natural number greater than 1 that has no positive divisors other than 1 and itself .

we define here a new prime number called prime of primes number (POP) is a prime number that consist of other prime numbers less than this number .

example :

1013 consist of 101 and 3 and both are primes .

notes :

2003 is not POP because leading zero not allowed .

the POP number must contain more than or equal two primes , and overlapping not allowed .

Input

The first line contains an integer T specifying the number of test cases. (T <= 10^4) followed by

T lines , each line contains an integer m number 0<=m<=10^9 .

Output

For each test case print single line contain the first integer greater than or equal to m and is (POP) .

Example

Input:

3

10

100

1000

Output:

23

113

1013

after solving this you can try http://www.spoj.com/problems/POP2/