

# 16 Ludic numbers

7 points

## Introduction

Ludic numbers are related to prime numbers as they are generated by a sieving process. The first ludic number is 1.

To generate succeeding ludic numbers create an array of increasing integers starting from 2.

```
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 ...
```

Take the first member of the resultant array as the next ludic number: 2. Remove every 2nd indexed item from the array (including the first).

```
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 ...
```

Take the first member of the resultant array as the next ludic number 3. Remove every 3rd indexed item from the array (including the first).

```
3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33 35 37 39 41 43 45 47 49 51 ...
```

Take the first member of the resultant array as the next ludic number 5. Remove every 5th indexed item from the array (including the first).

```
5 7 11 13 17 19 23 25 29 31 35 37 41 43 47 49 53 55 59 61 65 67 71 73 77 ...
```

Take the first member of the resultant array as the next ludic number 7. Remove every 7th indexed item from the array (including the first).

```
7 11 13 17 23 25 29 31 37 41 43 47 53 55 59 61 67 71 73 77 83 85 89 91 97 ...
```

Take the first member of the current array as the next ludic number L. Remove every Lth indexed item from the array (including the first).

Write a program that given a number n writes all "ludic numbers" smaller than n.

## Input

The input of the program is a positive integer not bigger than 1000.

50

## Output

The program must find all ludic numbers smaller than the provided one.

```
1 2 3 5 7 11 13 17 23 25 29 37 41 43 47
```

