Control C301A   P57404_en

A natural number $n > 0$ is called *powerful* if, for each prime divisor p of n, p^2 is also divisor of n. For example, $55125 = 3 \cdot 3 \cdot 5 \cdot 5 \cdot 5 \cdot 7 \cdot 7$ is a powerful number, because every prime factor appears, at least, twice.

Your task is to write a program that reads a sequence of numbers m and, for each one, prints all the powerful numbers between 1 and m.

Input

The input is a sequence of natural numbers $m > 0$.

Output

For each m of the input, print a line with all the powerful numbers between 1 and m, separated by commas and in increasing order.

Observation

Your program must implement and use the function

>   **bool** *is_powerful* (**int** *n*);

that, given an integer strictly positive n, indicates if is powerful or is not

Sample input

```
27
28
26
1
3
4
270
```

Sample output

```
1,4,8,9,16,25,27
1,4,8,9,16,25,27
1,4,8,9,16,25
1
1
1,4
1,4,8,9,16,25,27,32,36,49,64,72,81,100,108,121,125,128,144,169,196,200,216,225,243,256
```

Problem information

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