P0005. Hamming numbers P46736_en

A natural number greater than zero is a *Hamming number* if its divisors are only 2, 3 or 5. The twelve first Hamming numbers are 1, 2, 3, 4, 5, 8, 9, 10, 12, 15 and 16. However, neither 42 nor 97 are not Hamming numbers: 42 is divisible by 7, and 97 is a prime number greater than 5.

Your task is to write a program that prints the n first Hamming numbers for different values of n.

Your program must include and use the function

bool *is_hamming*(**int** *x*);

that indicates if a natural number |x| greater than zero is a Hamming number or is not.

Input

The input is a sequence of natural numbers.

Output

For each natural number n of the input print, in a line and separated by commas, the first n Hamming numbers in increasing order.

Sample input 1

```
12
2
6
0
1
```

Sample output 1

```
1,2,3,4,5,6,8,9,10,12,15,16
1,2
1,2,3,4,5,6

1
```

Observation

There are astute ways to generate the n first Hamming numbers sorted. We do not ask you to discover them: simply, implement a reasonable algorithm.

Problem information

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