# Problem A: Semi-prime H-numbers

This problem is based on an exercise of David Hilbert, who pedagogically suggested that one study the theory of 4n+1 numbers. Here, we do only a bit of that.

An H-number is a positive number which is one more than a multiple of four: 1, 5, 9, 13, 17, 21,... are the H-numbers. For this problem we pretend that these are the only numbers. The H-numbers are closed under multiplication.

As with regular integers, we partition the H-numbers into units, H-primes, and H-composites. 1 is the only unit. An H-number h is H-prime if it is not the unit, and is the product of two H-numbers in only one way: 1 × h. The rest of the numbers are H-composite.

For examples, the first few H-composites are: 5 × 5 = 25, 5 × 9 = 45, 5 × 13 = 65, 9 × 9 = 81, 5 × 17 = 85.

Your task is to count the number of H-semi-primes. An H-semi-prime is an H-number which is the product of exactly two H-primes. The two H-primes may be equal or different. In the example above, all five numbers are H-semi-primes. 125 = 5 × 5 × 5 is not an H-semi-prime, because it's the product of three H-primes.

Each line of input contains an H-number ≤ 1,000,001. The last line of input contains 0 and this line should not be processed.

For each inputted H-number h, print a line stating h and the number of H-semi-primes between 1 and h inclusive, separated by one space in the format shown in the sample.

## Sample input

```
21
85
789
0
```

## Output for sample input

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21 0
85 5
789 62
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