

# Marvelous Number

Input: standard input

Output: standard output

You all know about prime numbers. A prime number have only two divisors that is 1 and the number itself. There is another type of number called composite number. They have divisors other than themselves and 1. An important property of any number is that they can be expressed as a product of prime numbers. We call it prime factorization of a number e.g.

$$6 = 3 \times 2$$

$$9 = 3 \times 3$$

$$44 = 2 \times 2 \times 11$$

The prime factorization of a number is unique for that number. In this problem, we are interested in those numbers that are product of exactly two prime numbers (the primes should be distinct). Let us call this type of number Marvelous number. So, we can see 6 is a marvelous number but 8 is not and 10 is a marvelous number but 13 is not.

## Input Format

The input will consist of several lines each having a number **N**.

## Constraints

- $1 < N < 2^{31}$  [2 to the power 31].

## Output Format

For every number N print a line containing the message “N is a marvelous number, factors are p1 and p2” (without quotes) if N is a marvelous number. Here p1 and p2 are two prime factors of N and  $p1 < p2$ . If N is not a marvelous number print “N is not a marvelous number” (without quotes).

## Sample Input 0

```
6
8
10
13
```

## Sample Output 0

```
6 is a marvelous number, factors are 2 and 3
8 is not a marvelous number
10 is a marvelous number, factors are 2 and 5
13 is not a marvelous number
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