
Aromatic plants

P24799_en

A friend of Professor Oak suggested him including some aromatic plants in his garden, and Prof. Oak thought that it was such a good idea. As you can see, now he has 11 such plants: 5 in the top row, and 6 in the bottom row. Hmm... so we have a prime number and a composite number that add up to a prime number. How common is that?



Input

Input consists of several cases, each with an integer n between 2 and 10^7 .

Output

For every n , print the number of triples of integer numbers (a, b, c) such that:

- the three numbers are between 2 and n ,
- a is prime, b is composite, c is prime,
- and $a + b = c$.

Sample input

```
6
7
11
1000
10000000
```

Sample output

```
0
1
5
13957
220832173370
```

Problem information

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