Psychological comfort P97833_en

Professor Oak is getting old, as he can notice at the gym. Now, when he is on the running machine, he needs some psychological tricks to go on. For instance, supose that he decides to run for $m = 20$ minutes. Then, when he has been running for 2 minutes, he thinks "already 1/10 done". Similarly, at the minute 17, he thinks "only 3/20 left". Note that Prof. Oak solely likes fractions whose only prime factors (when simplified) are 2, 3 and 5. So, for $m = 20$, the minute 7 is not psychologically comforting, because both 7/20 and 13/20 have factors other than 2, 3 and 5.

Given m, how many psychologically comforting minutes will Prof. Oak enjoy?

Input

Input consists of several cases, each with an m between 1 and 10^{15}.

Output

For every m, print the number of psychologically comforting minutes between 1 and $m - 1$.

Sample input 1

```
1
10
20
66
81
1000000007
1000000000000000
```

Sample output 1

```
0
9
17
5
50
0
12909
```

Problem information

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