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Tobby and Goldbach's conjecture

Time limit: 2 s
Memory limit: 256000 MBytes
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Tobby is a smart dog who loves coding. Tobby is fascinated by Goldbach's conjecture, a cojeture very easy to describe but which has never been proven, despite efforts to do so by the best mathematicians in history. The conjecture states the following:

"Every even integer greater than 2 can be written as the sum of to prime numbers."

To learn how to code Tobby wants to solve a related problem: given an integer N, in how many different ways can that number be written as the sum of two prime numbers?

To solve the problem Tobby prepared a list of all the prime numbers less than or equal to 400:

$2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47, 53, 59, 61, 67, 71, 73, 79, 83, 89, 97, 101, 103, 107, 109, 113, 127,$
$131, 137, 139, 149, 151, 157, 163, 167, 173, 179, 181, 191, 193, 197, 199, 211, 223, 227, 229, 233, 239, 241, 251,$
$257, 263, 269, 271, 277, 281, 283, 293, 307, 311, 313, 317, 331, 337, 347, 349, 353, 359, 367, 373, 379, 383, 389, 397$

Input:

The first line contains an integer A $(1 \leq A \leq 200)$, then there are A lines, each one with an even integer N $(4 \leq N \leq 400)$

Output:

For each integer N in the input, you should write a line with the number of different ways that N can be written as the sum of two prime numbers.

Example input:

```
3
4
10
22
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Example output:

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1
2
3
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Problem setter: Santiago Gutierrez.