Problem H
Cut Power
Time limit: 3 seconds

Since the climate changes, the problem of drought is a big issue for the government. Some-times the government proposes a plan of intermittent supply by districts. The plan adopts the 5-day supply and 2-day cut-off water restriction measure. Suppose the government has N administrative districts, which are numbered as $1, 2, ..., n$. The plan of cutting off water supply is that the government would pick a random number 'm' ($1 \le m \le N$). The district m would first be cut off water supply. And then cut off the water supply in every mth district after that, wrapping around to 1 after N, ignoring districts already cut off. For example, if $N = 7$ and $m = 3$. Water supplies of the districts would be cut off in the order: 3, 6, 2, 7, 5, 1, 4.

Another big issue is power shortage crisis. The manager of the power company hopes his house will not suffer from power cut off or water cut off. He thinks that if his house is in the last order of power cut off and water cut off, maybe his house can avoid power faliure and water cut.

For example, if the government has eight districts. The order of water cut off with the random number $m = 2$ is 2, 4, 6, 8, 3, 7, 5, 1. Suppose that the manager lives in district #1. If the manager selects the random number $m = 6$ for the plan of power cut off. The order of power cut off is 6, 4, 3, 5, 8, 7, 2, 1. Therefore, the manager's house may have more chance avoiding power faliure and water cut.

The government had announced the random number for water cut off is 2. And the manager knows his house is the last district for water cut. Please write a program to help the manager to choose the random number for power cut off so that his house is also in the last district to have the power cut off. Note that the random number for power cut off must differ from the random number for water cut off.

Input File Format

There are more than one test cases in the input file. Each test case contains one positive integer, N, where N ($2 \le N \le 10,000$) indicates the total number of administrative districts. The input is terminated by '0'.

Output Format

For each test case, find the maximum number m, with $1 \le m \le N$, ensuring that the order of cut power for manager's house is the last. If you cannot find such number, output '-1'.

Sample Input

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5
8
0
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Output for the Sample Input

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-1
6
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