

STA Online Computer Programming Contest (DWITE)

Problem 5

OFF TO THE OFFICE

During one of Mr. Legge's inspiring World History class, someone released a foul smelling stink bomb, that resulted in the class having to stand outside the classroom in the hall in a line. Since no one owed up, to the incident, Mr. Legge determined a fair plan in sending students to the office, so administration could deal with the problem. The line was made up of N students (Donna was first in line and Nicholas was 13th). A number, m , would be picked at random, and the student who first would be sent to the office, was the person first in line (clearly the fairest starting point) and then in every m^{th} position after that, wrapping around to 1 after N , and ignoring students already sent. For example, if $N=15$ and $m=6$, students would be sent to the office in the following order: 1, 7, 13, 5, 12, 6, 15, 10, 8, 4, 9, 14, 11, 3, 2.

The situation is that Nicholas, who clearly is innocent, has officephobia, and hence does not want to go to the office. So, for any given N , the random number, m , needs to be carefully chosen so that Nicholas (13th in line) is always the last one selected. By then, administration should have determined who the culprit was.

The input file (DATA5) will contain five lines of data each containing the number of students, N , with $13 \leq N \leq 100$.

The output file (OUT5) will contain five lines, each representing the smallest random number m , $m > 0$, according to the above plan.

Sample Input (Only two lines given)

15
17

Sample Output

10
7