

Nine Out Of Ten

Input file: *standard input*
Output file: *standard output*
Time limit: 1 second
Memory limit: 1024 mebibytes

A mad scientist conducted n independent identical experiments and claimed that x of them were successful. It is well known that the mad scientist is wrong in exactly 90% of cases when determining the success of a single experiment. Your task is to write a program that calculates the minimum and the maximum possible number of successful experiments for all x from 0 to n . It is guaranteed that the total number of experiments is always divisible by 10.

Input

The first line contains a single integer n , which is a multiple of ten ($10 \leq n \leq 10\,000$).

Output

Print $n + 1$ lines. On the i -th line, output two integers separated by a space: the minimum and the maximum possible number of successful experiments for $x = i - 1$.

Example

<i>standard input</i>	<i>standard output</i>
10	9 9 8 10 7 9 6 8 5 7 4 6 3 5 2 4 1 3 0 2 1 1