A special game of subtraction is to find the minimum times of subtraction for letting the sequence 1, 2, 3, …, n becomes a zero sequence 0, 0, 0, …, 0. When taking subtraction, a limit must be satisfied: the subtraction can be made on any elements of the sequence, but each time only one subtracted value can be chosen for all the elements. Write a program to calculate the minimum times of subtraction required for an arbitrary value of input n.

Input

The input contains several cases and ends with EOF. Each case contains one integer value n.

Output

For each case, output the minimum times of subtraction required for obtaining the zero sequence as mentioned above.

Sample Input

```
4
16
255
```

Sample Output

```
3
5
8
```