

3452 Alice and Bob

Alice and Bob are friends and they like playing a card game in spare time.

The game is very simple. Alice has N cards in hand, each marked with a unique integer number. Bob knows numbers on the cards are different, but he doesn't know their exact values. When the game starts, Alice takes out a card randomly, shows it to Bob, and then she asks Bob to guess whether it's the one with the largest number. If Bob answers "yes", the game ends; otherwise, Alice takes out another card at random and repeats this process. If the game reaches the last card, Bob will always answer "yes".

Recently, Bob has designed a good strategy to find out the card with the largest number. In the first M ($1 \leq M \leq N - 1$) rounds, he always answers "no", so that he could examine M cards first. Then, when a card whose number is larger than that of all previous cards appears, he answers "yes".

You may have noticed that M is critical to Bob's strategy. So please choose the optimal M for Bob to maximize the probability of getting the card with the largest number. If more than one M found, choose the smallest one.

Input

There are multiple test cases. Each contains an integer N ($3 \leq N \leq 100000$).

Output

For each case, print the optimal M in a single line.

Sample Input

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3
4
5
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Sample Output

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1
1
2
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