1.Candies and Herry Potter

Make by Minhajul Islam(CSE,DIU)

time limit per test: 1 second
memory limit per test: 256 megabytes
input: standard input
output: standard output

Harry Potter has n number of friends. He wants to meet his friends. He will take some magical candies with him to meet his n number of friends one after the one, which will double with each friend he meets. He want to distribute these candies to his friends in such a way that:

- The number of candies that Harry Potter will take will be doubled for each friend he meets;
- He has to give some number of candies to the first friend and take the remaining candies to the second friend. In this way n number of friends will be approached consecutively.
- All friends will get equal **integer** number of candies;
- After giving an equal **integer** number of candies to n friends, he will have no candies left;

Your task is find out the number of candies , with how many candies Harry Potter will meet his first friend.

[Hermione Granger gave you a clue , Harry Potter will give each friend one more candy than he would take to meet the first friend.]

[Ron Weasley also gave you a clue, Harry Potter has to go to meet his first friend with any odd number of candies between n and 2^n+2].

Input

The first line of the input contains one integer n $(3 \le n \le 10)$ — the number of friends.

Output

print the answer — the number of candies he needs to meet his first friend.

Example

input

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4
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output

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Herry Potter should take 15 candies to meet his first friend.
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input

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5
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output

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Herry Potter should take 31 candies to meet his first friend.
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input

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10
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output

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Herry Potter should take 1023 candies to meet his first friend.
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