Viral Advertising

HackerLand Enterprise is adopting a new viral advertising strategy. When they launch a new product, they advertise it to exactly 5 people on social media.

On the first day, half of those 5 people (i.e., $floor(\frac{5}{2}) = 2$) like the advertisement and each shares it with 3 of their friends. At the beginning of the second day, $floor(\frac{5}{2}) \times 3 = 2 \times 3 = 6$ people receive the advertisement.

Each day, $floor(\frac{recipients}{2})$ of the recipients like the advertisement and will share it with 3 friends on the following day. Assuming nobody receives the advertisement twice, determine how many people have liked the ad by the end of a given day, beginning with launch day as day 1.

Example

$n = 5$.

Day	Shared	Liked	Cumulative
1	5	2	2
2	6	3	5
3	9	4	9
4	12	6	15
5	18	9	24

The progression is shown above. The cumulative number of likes on the 5^{th} day is 24.

Function Description

Complete the viralAdvertising function in the editor below.

viralAdvertising has the following parameter(s):

- int n: the day number to report

Returns

- int: the cumulative likes at that day

Input Format

A single integer, n, the day number.

Constraints

- $1 \leq n \leq 50$

Sample Input

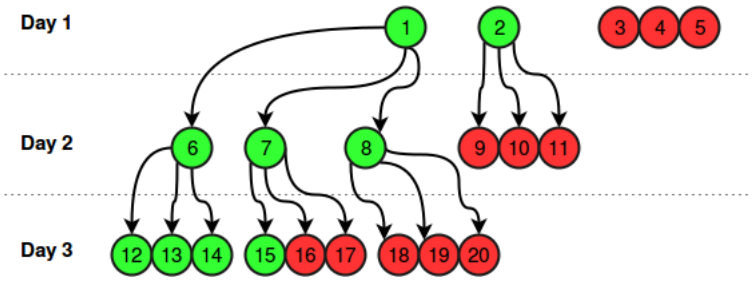
```
3
```

Sample Output

```
9
```

Explanation

This example is depicted in the following diagram:



2 people liked the advertisement on the first day, **3** people liked the advertisement on the second day and **4** people liked the advertisement on the third day, so the answer is **2 + 3 + 4 = 9**.

Change Theme Language Python 3

```
# The function is expected to return an INTEGER.
# The function accepts INTEGER n as parameter.
#
d = {}
def viralAdvertising(n):
    # Write your code here
    def helper(n):
        if n in d:
            return d[n]

        if n == 1:
            d[n] = 2
            return 2

        fn = math.floor(helper(n - 1) * 3 / 2)
        d[n] = fn
        return fn

    answer = 0
    for i in range(1, n + 1):
        answer += helper(i)
    return answer


if __name__ == '__main__':
    fptr = open(os.environ['OUTPUT_PATH'], 'w')

    n = int(input().strip())

    result = viralAdvertising(n)

    fptr.write(str(result) + '\n')

    fptr.close()
```

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Congratulations

You solved this challenge. Would you like to challenge your friends?

Next Challenge

- Test case 0
- Test case 1
- Test case 2
- Test case 3
- Test case 4

Compiler Message

```
Success
```

Input (stdin) Download

```
1 3
```

Expected Output Download

```
1 9
```