Problem 4: Finding Complexity using Counter Method

Convert the following algorithm into a program and find its time

complexity using counter method.

```
void function(int n)
{
    int c= 0;
    for(int i=n/2; i<n; i++)
        for(int j=1; j<n; j = 2 * j)
            for(int k=1; k<n; k = k * 2)
                c++;
}
```

Note: No need of counter increment for declarations and scanf() and count variable printf()
statements.

Input:
 A positive Integer n
Output:
Print the value of the counter variable

Answer:

```c
#include <stdio.h>

int main() {
    int n;
    scanf("%d", &n);

    int count = 1;
    int c = 0;

    for (int i = n / 2; i < n; i++) {
        count++; // comparison i < n
        for (int j = 1; j < n; j = 2 * j) {
            count++; // comparison j < n
            for (int k = 1; k < n; k = k * 2) {
                count++; // comparison k < n

                c++;
                count++; // c++
            }
            count++; // k = k * 2
        }
        count++; // j = 2 * j
    }
    count++; // last failed i < n comparison

    printf("%d\n", count);
    return 0;
}
```

	Input	Expected	Got	
✔	4	30	30	✔
✔	10	212	212	✔

Passed all tests! ✔

Correct

Marks for this submission: 1.00/1.00.