

PROBLEM 3

Convert the following algorithm into a program and find its time complexity using counter method.

```
Factor(num) {  
  {  
    for (i = 1; i <= num; ++i)  
    {  
      if (num % i == 0)  
      {  
        printf("%d ", i);  
      }  
    }  
  }  
}
```

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

Input:

A positive Integer n

Output:

Print the value of the counter variable

```

1  #include<stdio.h>
2  int factor(int num){
3      int count=0;
4      for(int i=1; i<=num; ++i){
5          count++;
6          count++;
7          if(num%i==0){
8              //print("%d",i);//
9              count++;
10         }
11     }
12     count++;
13     return count;
14 }
15 int main(){
16     int n;
17     scanf("%d",&n);
18     printf("%d",factor(n));
19 }
20
21

```

| | Input | Expected | Got | |
|---|-------|----------|-----|---|
| ✓ | 12 | 31 | 31 | ✓ |
| ✓ | 25 | 54 | 54 | ✓ |
| ✓ | 4 | 12 | 12 | ✓ |

Passed all tests! ✓