Question **1**

Correct

Marked out of 3.00

Flag question

Some data sets specify dates using the year and day of year rather than the year, month, and day of month. The day of year (DOY) is the sequential day number starting with day 1 on January 1st.

There are two calendars - one for normal years with 365 days, and one for leap years with 366 days. Leap years are divisible by 4. Centuries, like 1900, are not leap years unless they are divisible by 400. So, 2000 was a leap year.

To find the day of year number for a standard date, scan down the Jan column to find the day of month, then scan across to the appropriate month column and read the day of year number. Reverse the process to find the standard date for a given day of year.

Write a program to print the Day of Year of a given date, month and year.

Sample Input 1

```
18
6
2020
```

Sample Output 1

```
170
```

Answer: (penalty regime: 0 %)

```c
#include<stdio.h>
int main(){
 int day,month,year,i,day_of_year=0;
 int day_in_month[12]={31,28,31,30,31,30,31,30,31,30,31,30};
 scanf("%d %d %d",&day,&month,&year);
 if((year%4==0 && year%100!=0)|| year%400==0)
 {
     day_in_month[1]=29;
 }
     for(i=0;i<month-1;i++)
     {
         day_of_year+=day_in_month[i];
     }
     day_of_year+=day;
     printf("%d",day_of_year);

  return 0;
}
```

	Input	Expected	Got	
✓	18 6 2020	170	170	✓

Passed all tests! ✓

Question **2**

Correct

Marked out of 5.00

Flag question

Suppandi is trying to take part in the local village math quiz. In the first round, he is asked about shapes and areas. Suppandi, is confused, he was never any good at math. And also, he is bad at remembering the names of shapes. Instead, you will be helping him calculate the area of shapes.

- When he says rectangle he is actually referring to a square.
- When he says square, he is actually referring to a triangle.
- When he says triangle he is referring to a rectangle
- And when he is confused, he just says something random. At this point, all you can do is say 0.

Help Suppandi by printing the correct answer in an integer.

Input Format

- Name of shape (always in upper case R à Rectangle, S à Square, T à Triangle)
- Length of 1 side
- Length of other side

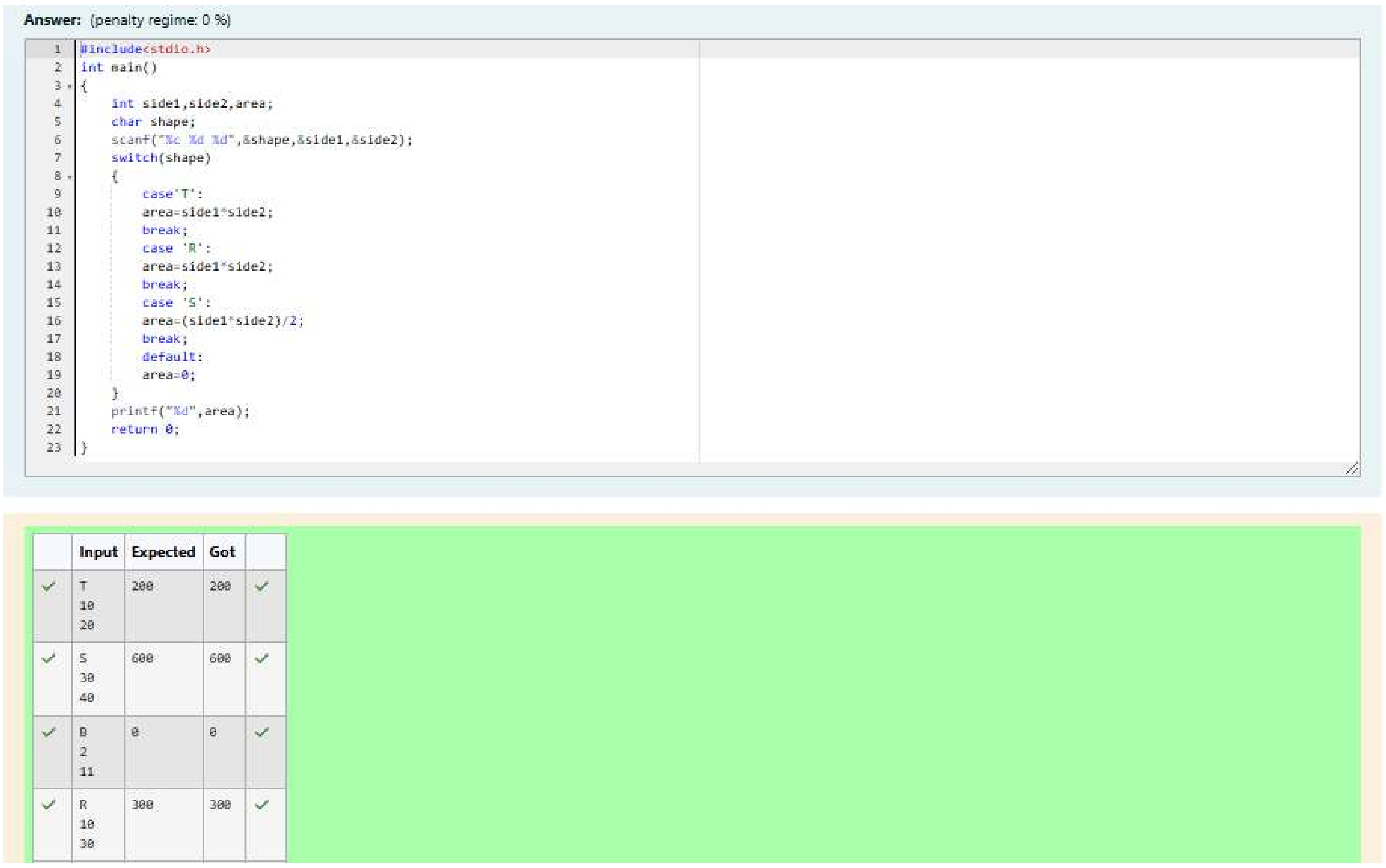
Note: In case of triangle, you can consider the sides as height and length of base

Output Format

- Print the area of the shape.

Sample Input 1

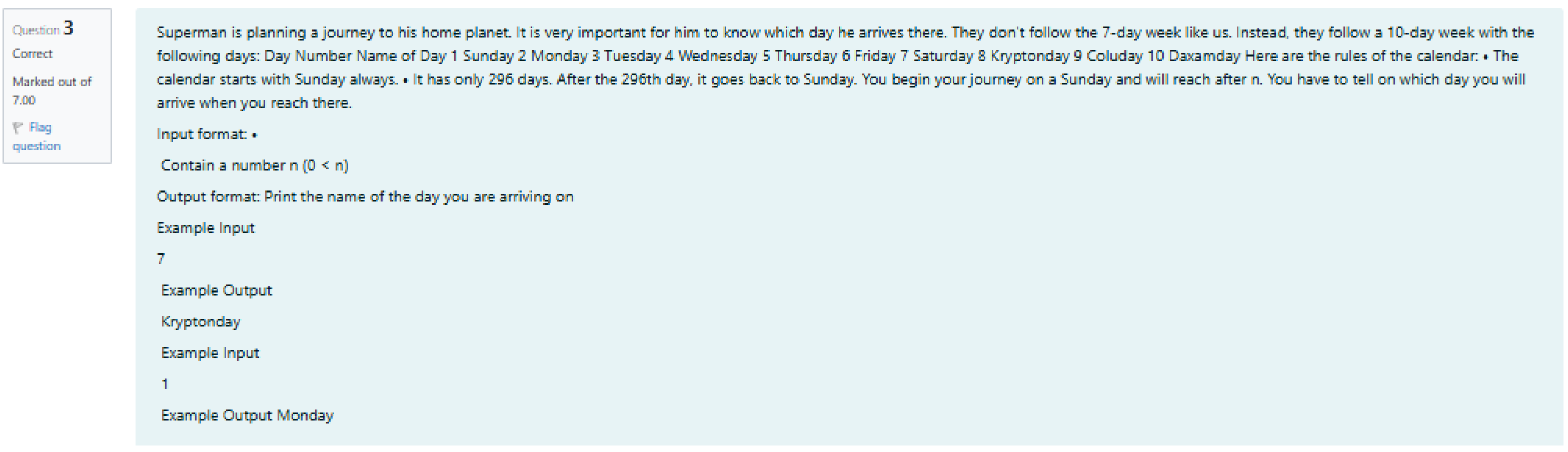
```
T
10
20
```



Answer: (penalty regime: 0 %)

```c
#include<stdio.h>
int main()
{
    int side1,side2,area;
    char shape;
    scanf("%c %d %d",&shape,&side1,&side2);
    switch(shape)
    {
        case'T':
        area=side1*side2;
        break;
        case 'R':
        area=side1*side2;
        break;
        case 'S':
        area=(side1*side2)/2;
        break;
        default:
        area=0;
    }
    printf("%d",area);
    return 0;
}
```

	Input	Expected	Got	
✓	T 10 20	200	200	✓
✓	S 30 40	600	600	✓
✓	B 2 11	0	0	✓
✓	R 10 30	300	300	✓



Question 3

Correct

Marked out of 7.00

Flag question

Superman is planning a journey to his home planet. It is very important for him to know which day he arrives there. They don't follow the 7-day week like us. Instead, they follow a 10-day week with the following days: Day Number Name of Day 1 Sunday 2 Monday 3 Tuesday 4 Wednesday 5 Thursday 6 Friday 7 Saturday 8 Kryptonday 9 Coluday 10 Daxamday Here are the rules of the calendar: • The calendar starts with Sunday always. • It has only 296 days. After the 296th day, it goes back to Sunday. You begin your journey on a Sunday and will reach after n. You have to tell on which day you will arrive when you reach there.

Input format: •

Contain a number n (0 < n)

Output format: Print the name of the day you are arriving on

Example Input

7

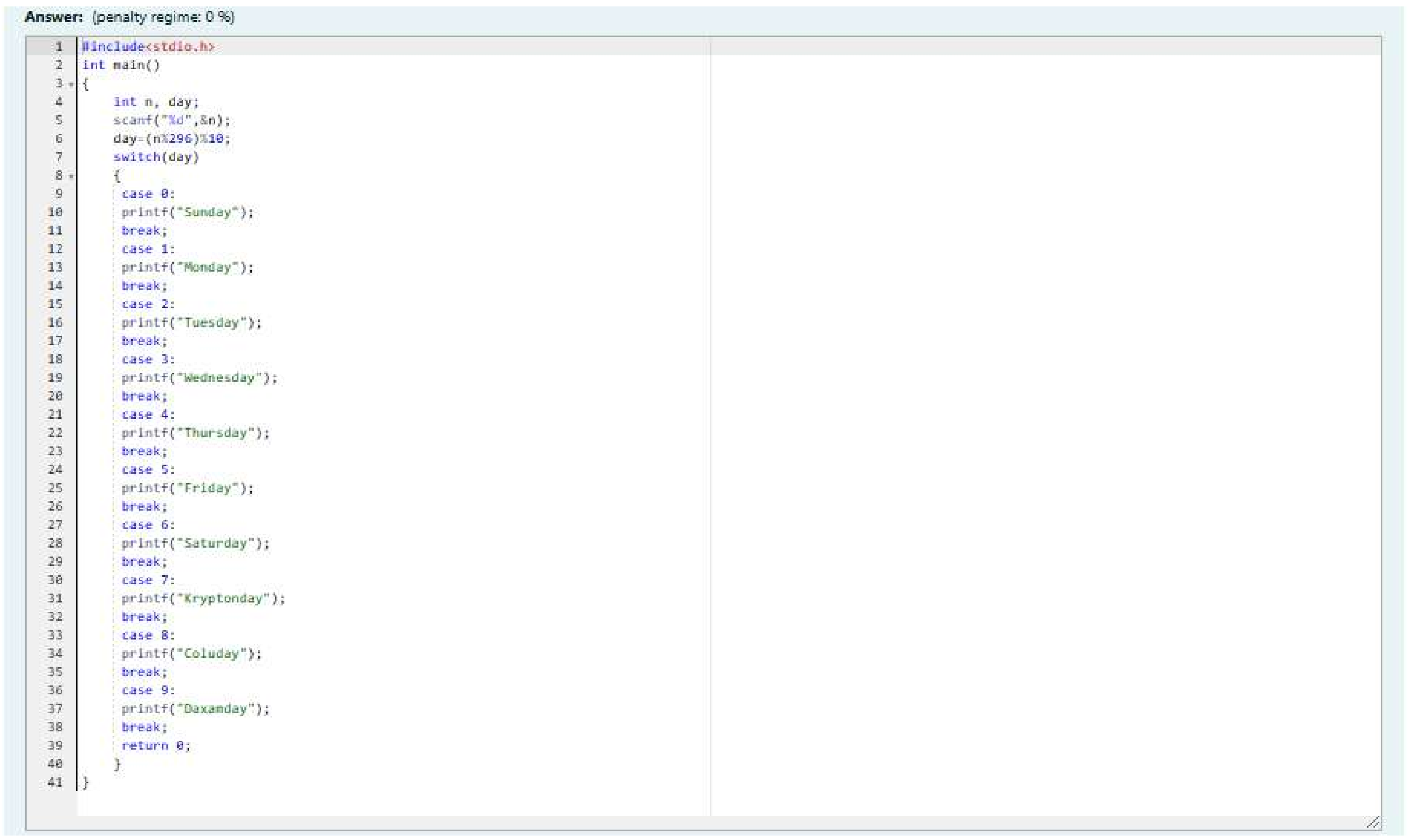
Example Output

Kryptonday

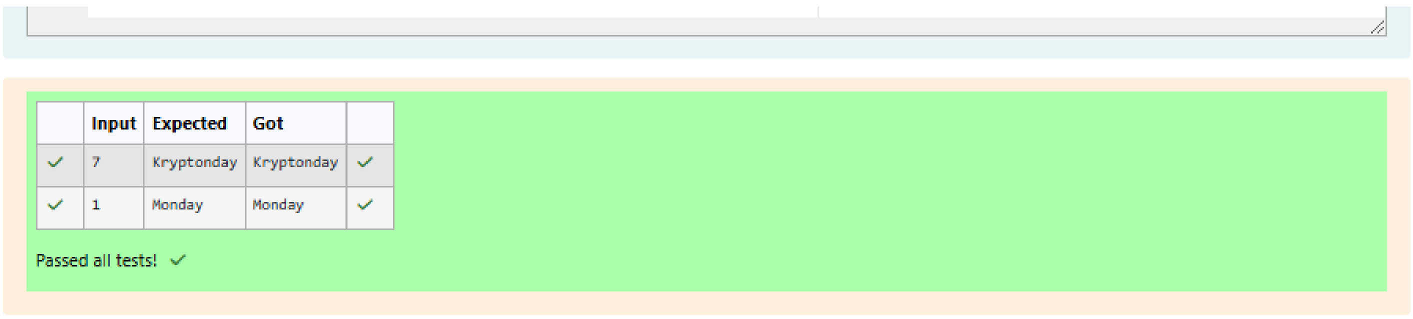
Example Input

1

Example Output Monday


Answer: (penalty regime: 0 %)

```c
#include<stdio.h>
int main()
{
    int n, day;
    scanf("%d",&n);
    day=(n%296)%10;
    switch(day)
    {
     case 0:
     printf("Sunday");
     break;
     case 1:
     printf("Monday");
     break;
     case 2:
     printf("Tuesday");
     break;
     case 3:
     printf("Wednesday");
     break;
     case 4:
     printf("Thursday");
     break;
     case 5:
     printf("Friday");
     break;
     case 6:
     printf("Saturday");
     break;
     case 7:
     printf("Kryptonday");
     break;
     case 8:
     printf("Coluday");
     break;
     case 9:
     printf("Daxamday");
     break;
     return 0;
    }
}
```



	Input	Expected	Got	
✓	7	Kryptonday	Kryptonday	✓
✓	1	Monday	Monday	✓

Passed all tests! ✓

Question **1**

Correct

Marked out of 3.00

Flag question

Alice and Bob are playing a game called "Stone Game". Stone game is a two-player game. Let N be the total number of stones. In each turn, a player can remove either one stone or four stones. The player who picks the last stone, wins. They follow the "Ladies First" norm. Hence Alice is always the one to make the first move. Your task is to find out whether Alice can win, if both play the game optimally.

Input Format

First line starts with T, which is the number of test cases. Each test case will contain N number of stones.

Output Format

Print "Yes" in the case Alice wins, else print "No".

Constraints

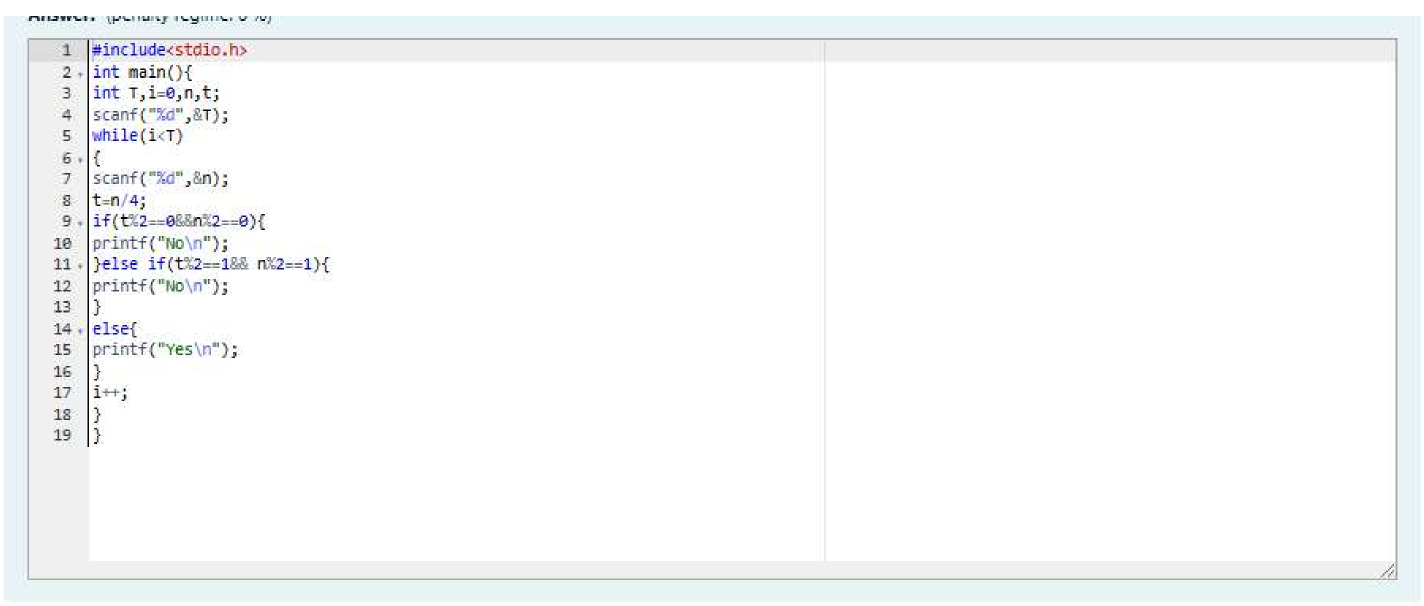
1<=T<=1000

1<=N<=10000

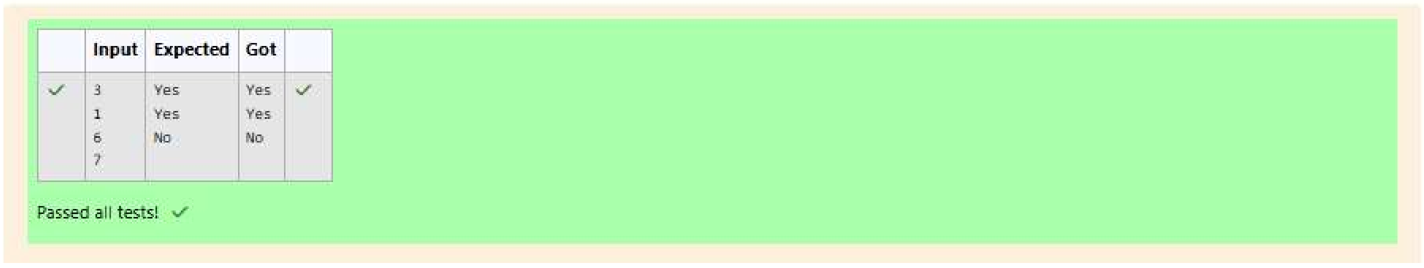
Sample Input and Output

Input

```
3
1
6
```

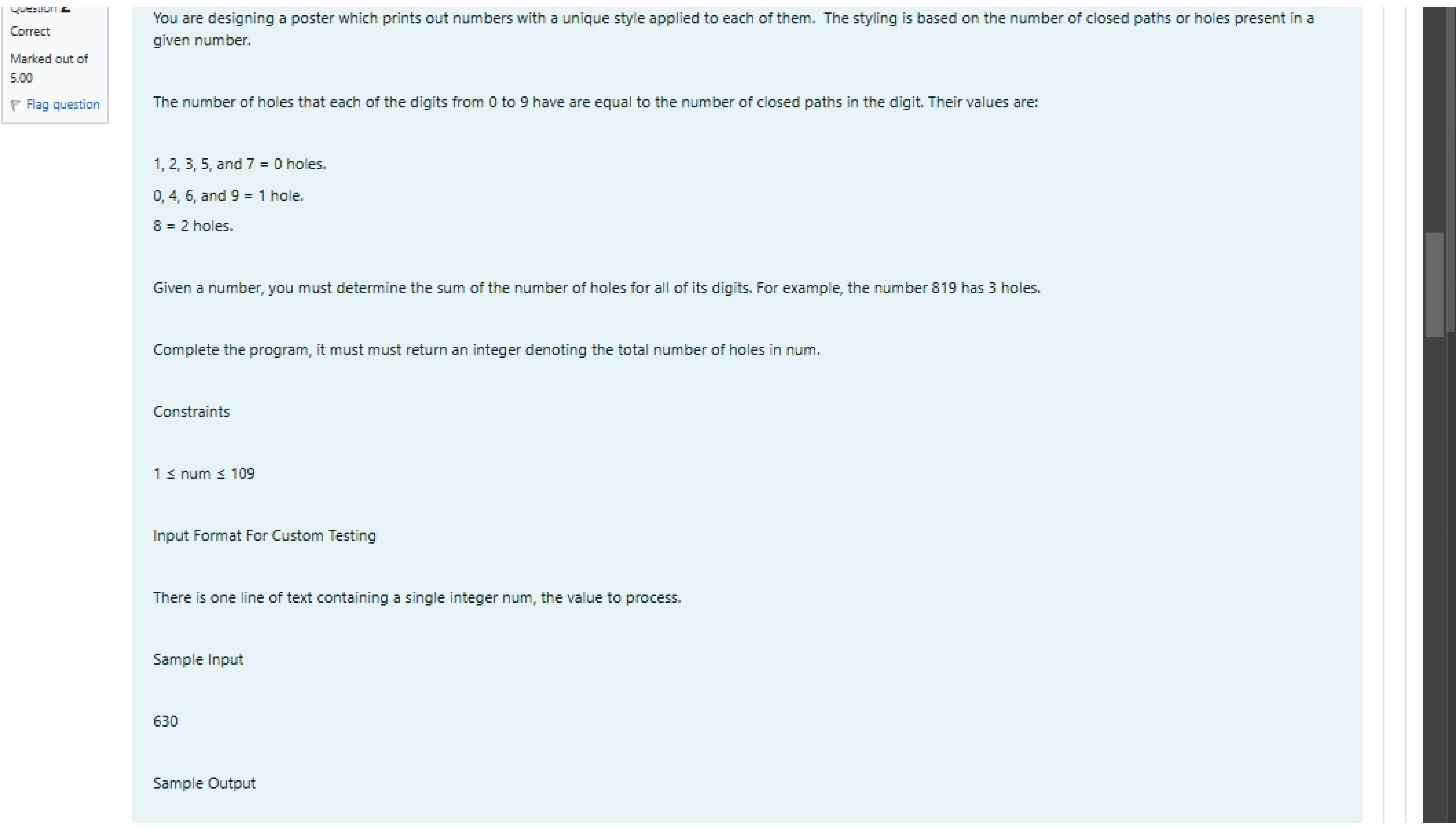

Answer: (penalty regime: 0 %)

```c
#include<stdio.h>
int main(){
int T,i=0,n,t;
scanf("%d",&T);
while(i<T)
{
scanf("%d",&n);
t=n/4;
if(t%2==0&&n%2==0){
printf("No\n");
}else if(t%2==1&& n%2==1){
printf("No\n");
}
else{
printf("Yes\n");
}
i++;
}
}
```



	Input	Expected	Got	
✓	3 1 6 7	Yes Yes No	Yes Yes No	✓

Passed all tests! ✓



Question 2

Correct

Marked out of 5.00

Flag question

You are designing a poster which prints out numbers with a unique style applied to each of them. The styling is based on the number of closed paths or holes present in a given number.

The number of holes that each of the digits from 0 to 9 have are equal to the number of closed paths in the digit. Their values are:

1, 2, 3, 5, and 7 = 0 holes.

0, 4, 6, and 9 = 1 hole.

8 = 2 holes.

Given a number, you must determine the sum of the number of holes for all of its digits. For example, the number 819 has 3 holes.

Complete the program, it must must return an integer denoting the total number of holes in num.

Constraints

1 ≤ num ≤ 109

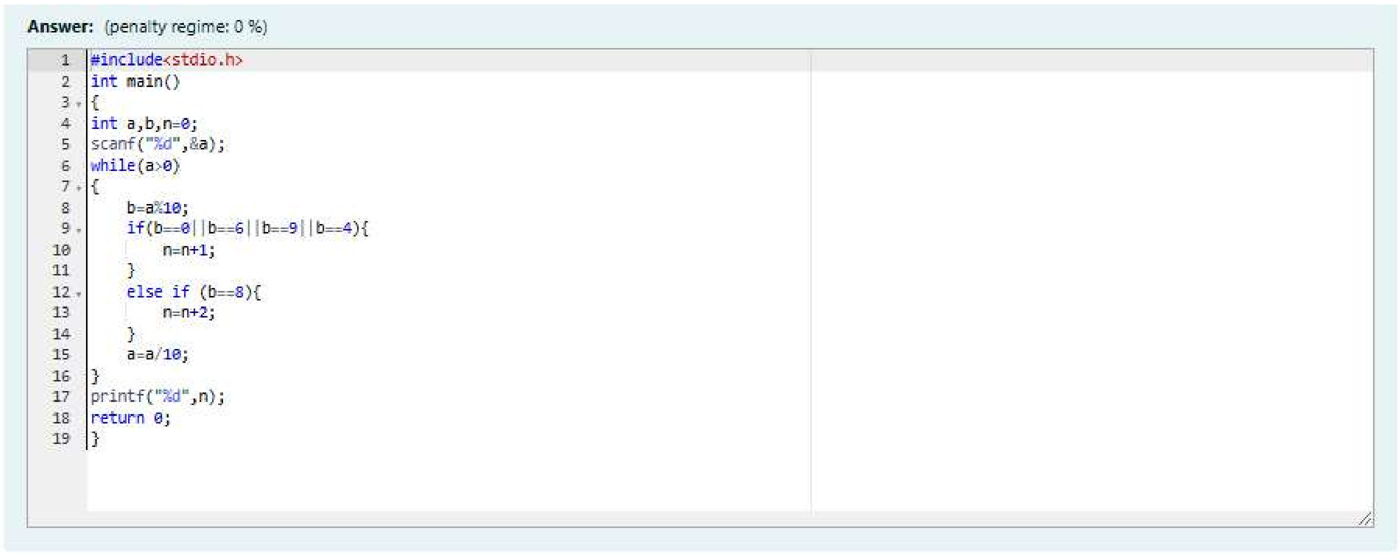
Input Format For Custom Testing

There is one line of text containing a single integer num, the value to process.

Sample Input

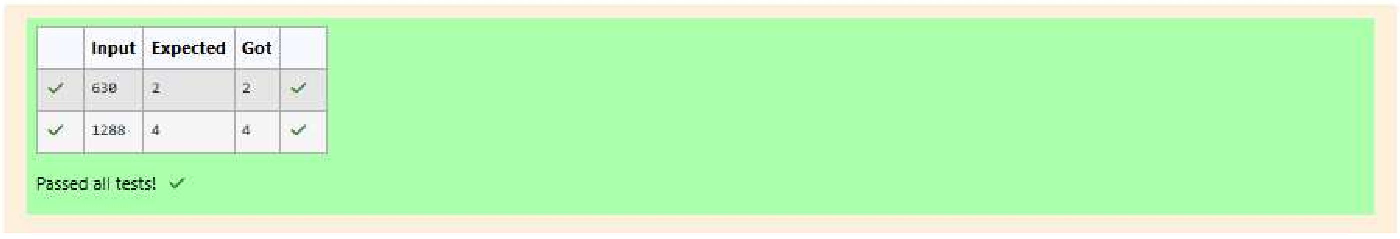
630

Sample Output



Answer: (penalty regime: 0 %)

```c
#include<stdio.h>
int main()
{
int a,b,n=0;
scanf("%d",&a);
while(a>0)
{
    b=a%10;
    if(b==0||b==6||b==9||b==4){
        n=n+1;
    }
    else if (b==8){
        n=n+2;
    }
    a=a/10;
}
printf("%d",n);
return 0;
}
```



	Input	Expected	Got	
✓	630	2	2	✓
✓	1288	4	4	✓

Passed all tests! ✓

Question **3**

Correct

Marked out of 7.00

Flag question

The problem solvers have found a new Island for coding and named it as Philaland. These smart people were given a task to make a purchase of items at the Island easier by distributing various coins with different values. Manish has come up with a solution that if we make coins category starting from $1 till the maximum price of the item present on Island, then we can purchase any item easily. He added the following example to prove his point.

Let's suppose the maximum price of an item is 5$ then we can make coins of {$1, $2, $3, $4, $5}to purchase any item ranging from $1 till $5.

Now Manisha, being a keen observer suggested that we could actually minimize the number of coins required and gave following distribution {$1, $2, $3}. According to him any item can be purchased one time ranging from $1 to $5. Everyone was impressed with both of them. Your task is to help Manisha come up with a minimum number of denominations for any arbitrary max price in Philaland.

Input Format

Contains an integer N denoting the maximum price of the item present on Philaland.

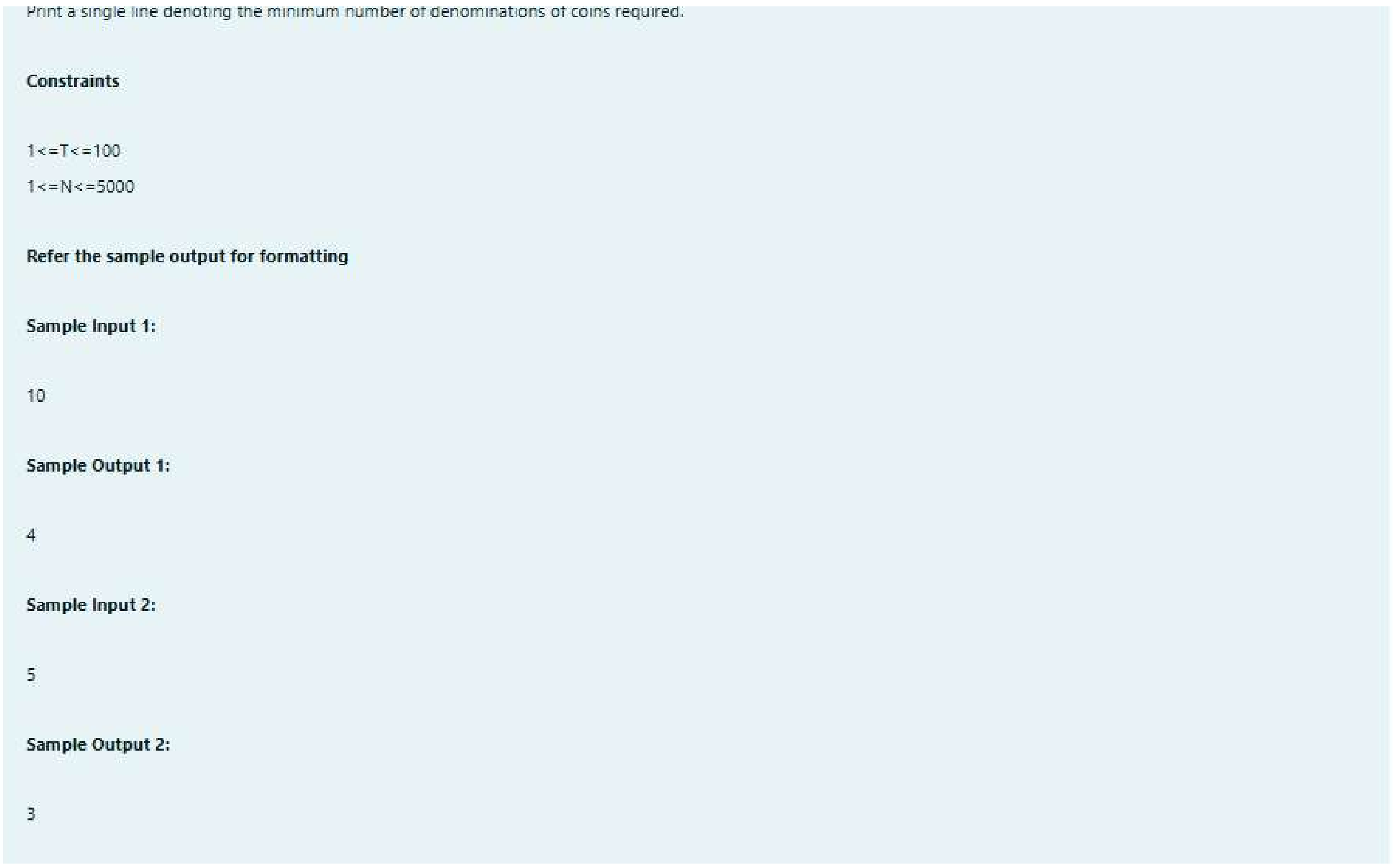
Output Format

Print a single line denoting the minimum number of denominations of coins required.

Constraints

1<=T<=100

1<=N<=5000



Print a single line denoting the minimum number of denominations of coins required.

Constraints

1<=T<=100

1<=N<=5000

Refer the sample output for formatting

Sample Input 1:

10

Sample Output 1:

4

Sample Input 2:

5

Sample Output 2:

3

Explanation:

For test case 1, N=10.

According to Manish {$1, $2, $3,... $10} must be distributed.

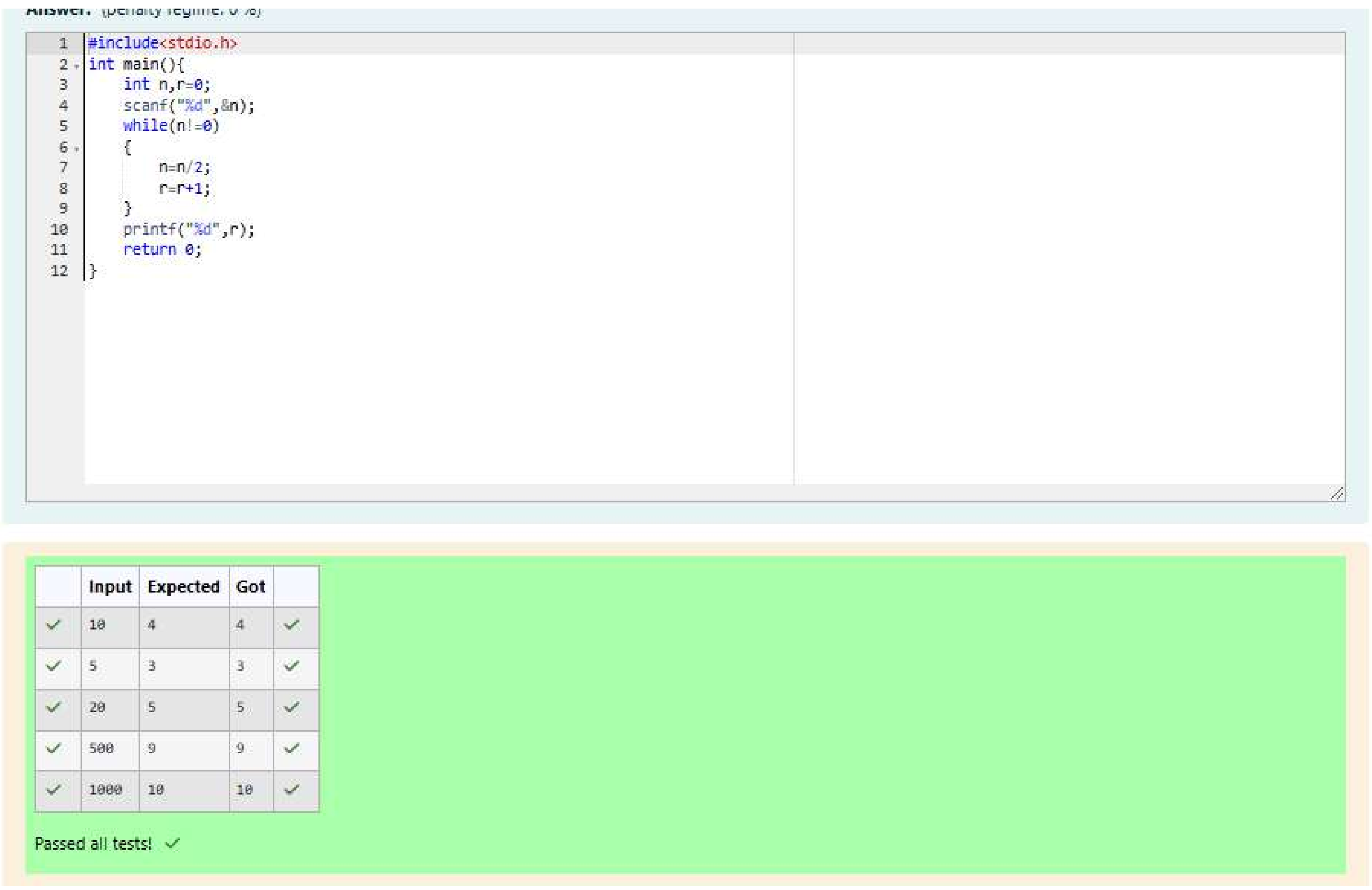
But as per Manisha only {$1, $2, $3, $4} coins are enough to purchase any item ranging from $1 to $10. Hence minimum is 4. Likewise denominations could also be {$1, $2, $3, $5}. Hence answer is still 4.

For test case 2, N=5.

According to Manish {$1, $2, $3, $4, $5} must be distributed.

But as per Manisha only {$1, $2, $3} coins are enough to purchase any item ranging from $1 to $5. Hence minimum is 3. Likewise, denominations could also be {$1, $2, $4}. Hence answer is still 3.

Answer: (penalty regime: 0 %)

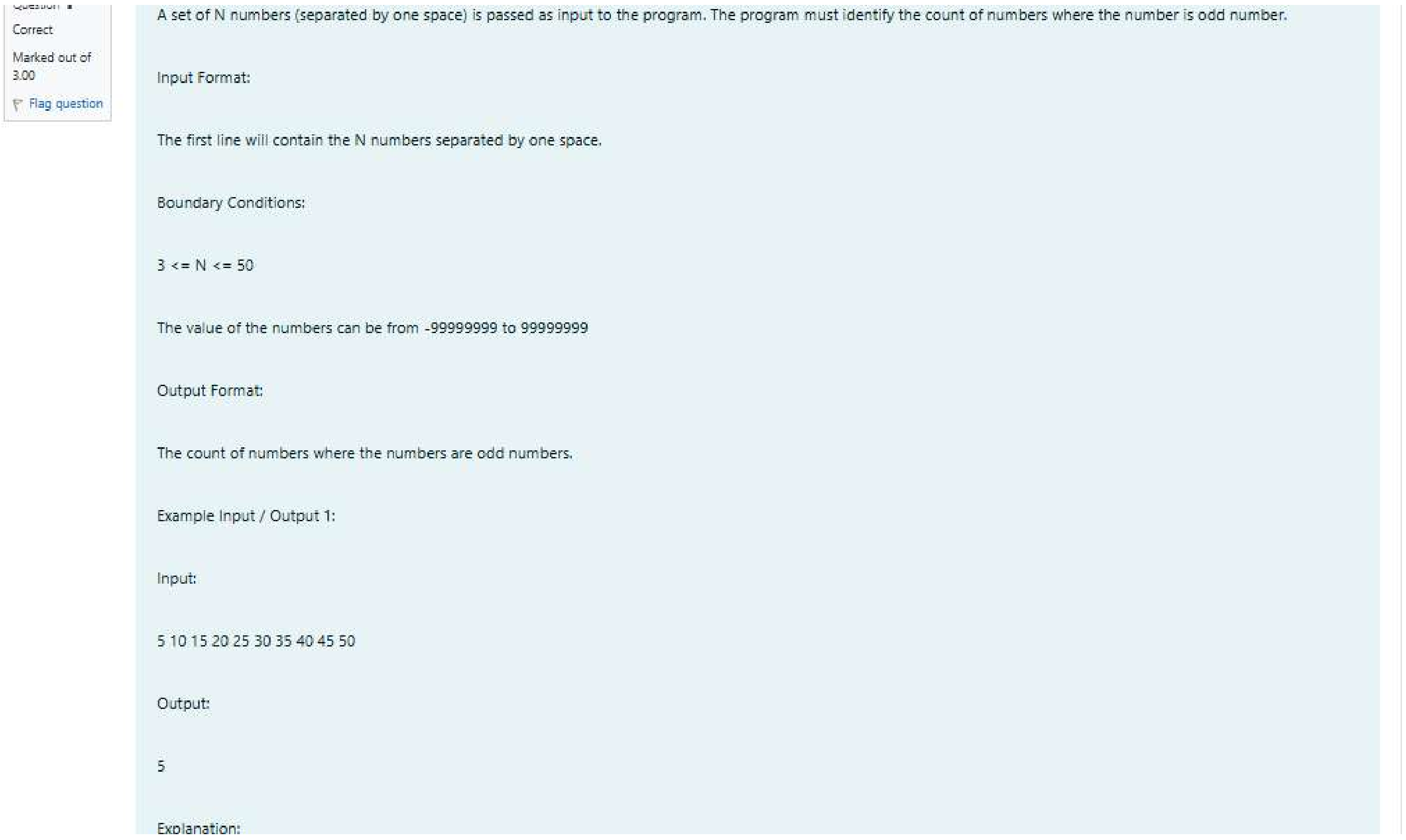


Answer: (penalty regime: 0 %)

```c
#include<stdio.h>
int main(){
    int n,r=0;
    scanf("%d",&n);
    while(n!=0)
    {
        n=n/2;
        r=r+1;
    }
    printf("%d",r);
    return 0;
}
```

	Input	Expected	Got	
✓	10	4	4	✓
✓	5	3	3	✓
✓	20	5	5	✓
✓	500	9	9	✓
✓	1000	10	10	✓

Passed all tests! ✓



Question

Correct

Marked out of 3.00

Flag question

A set of N numbers (separated by one space) is passed as input to the program. The program must identify the count of numbers where the number is odd number.

Input Format:

The first line will contain the N numbers separated by one space.

Boundary Conditions:

3 <= N <= 50

The value of the numbers can be from -99999999 to 99999999

Output Format:

The count of numbers where the numbers are odd numbers.

Example Input / Output 1:

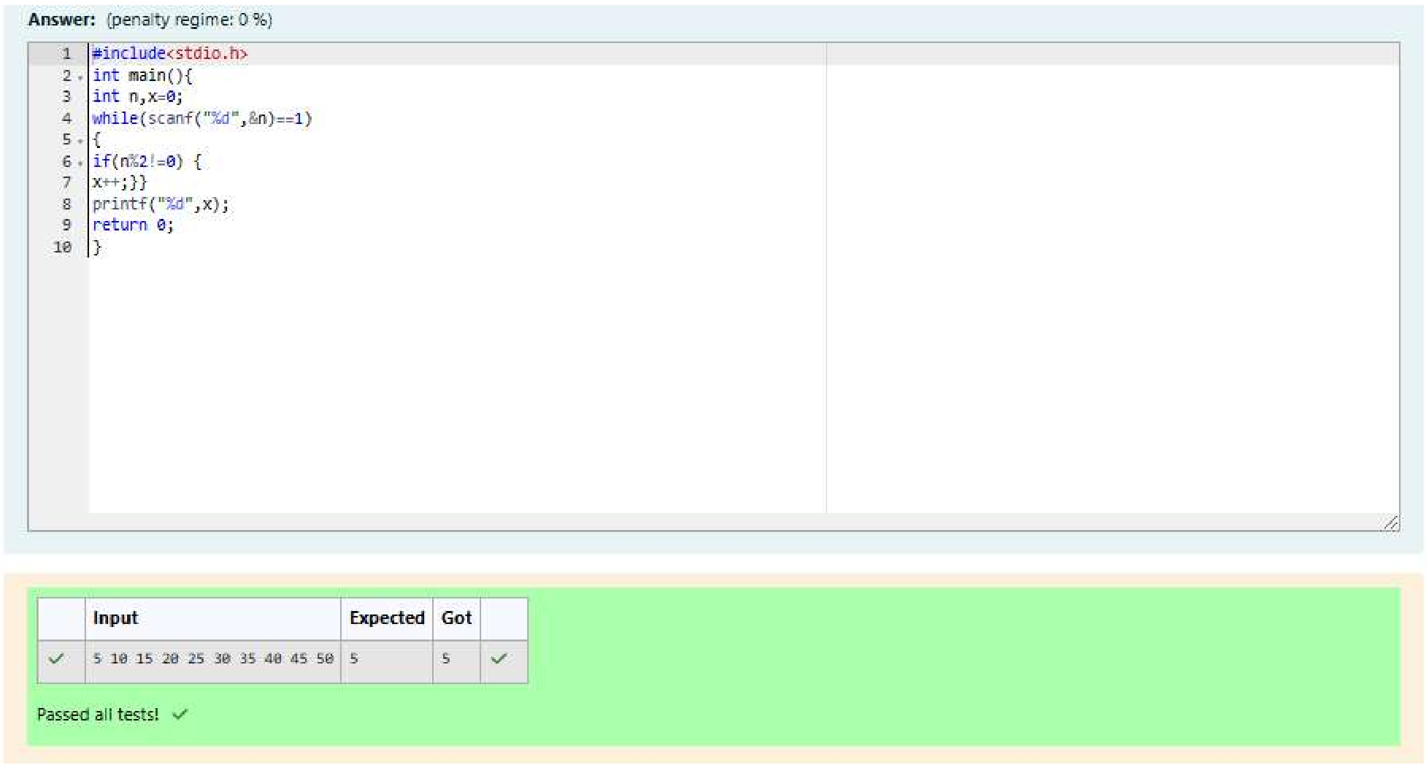
Input:

```
5 10 15 20 25 30 35 40 45 50
```

Output:

```
5
```

Explanation:

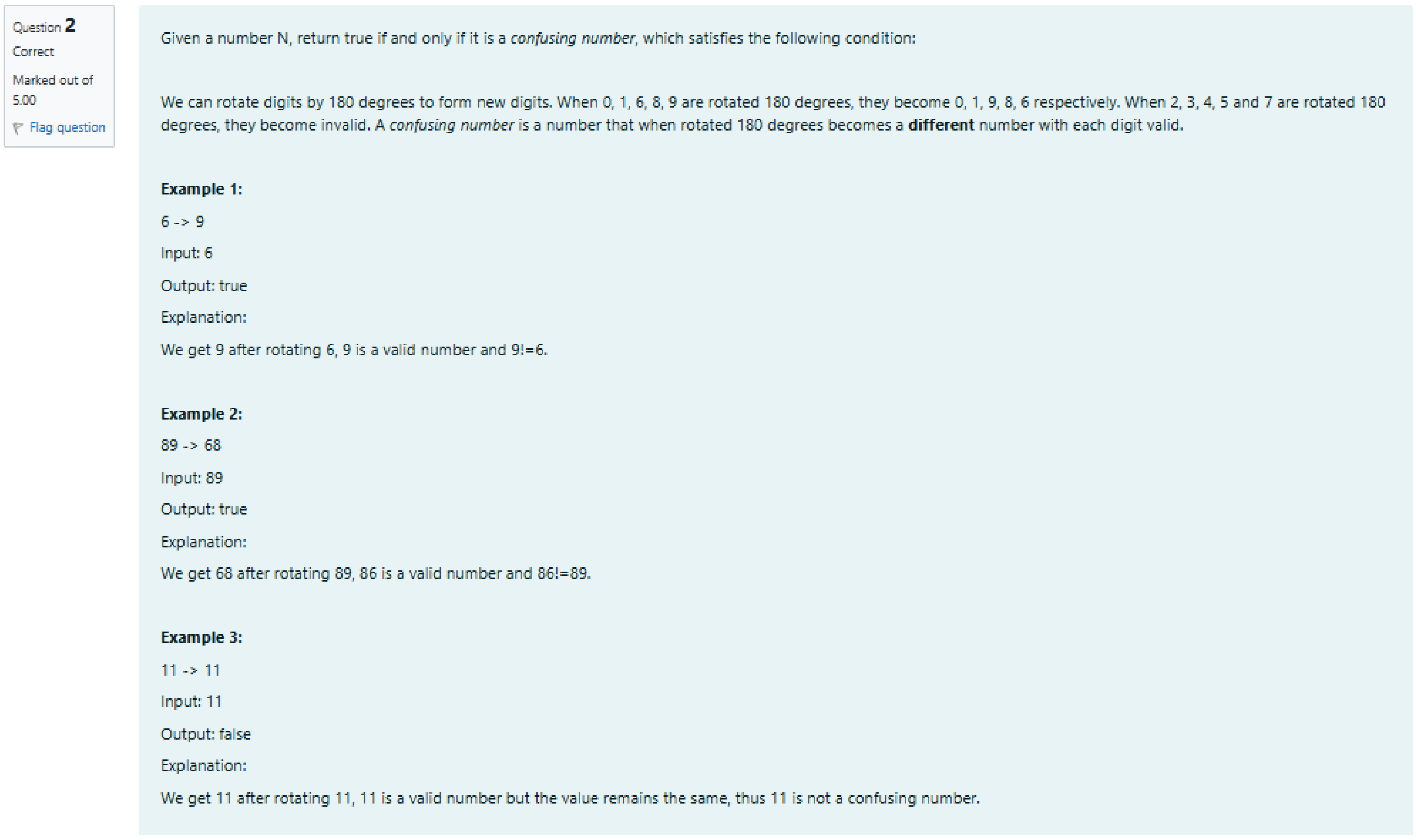


Answer: (penalty regime: 0 %)

```c
#include<stdio.h>
int main(){
int n,x=0;
while(scanf("%d",&n)==1)
{
if(n%2!=0) {
x++;}}
printf("%d",x);
return 0;
}
```

	Input	Expected	Got	
✓	5 10 15 20 25 30 35 40 45 50	5	5	✓

Passed all tests! ✓



Question **2**

Correct

Marked out of 5.00

Flag question

Given a number N, return true if and only if it is a *confusing number*, which satisfies the following condition:

We can rotate digits by 180 degrees to form new digits. When 0, 1, 6, 8, 9 are rotated 180 degrees, they become 0, 1, 9, 8, 6 respectively. When 2, 3, 4, 5 and 7 are rotated 180 degrees, they become invalid. A *confusing number* is a number that when rotated 180 degrees becomes a **different** number with each digit valid.

Example 1:

6 -> 9

Input: 6

Output: true

Explanation:

We get 9 after rotating 6, 9 is a valid number and 9!=6.

Example 2:

89 -> 68

Input: 89

Output: true

Explanation:

We get 68 after rotating 89, 86 is a valid number and 86!=89.

Example 3:

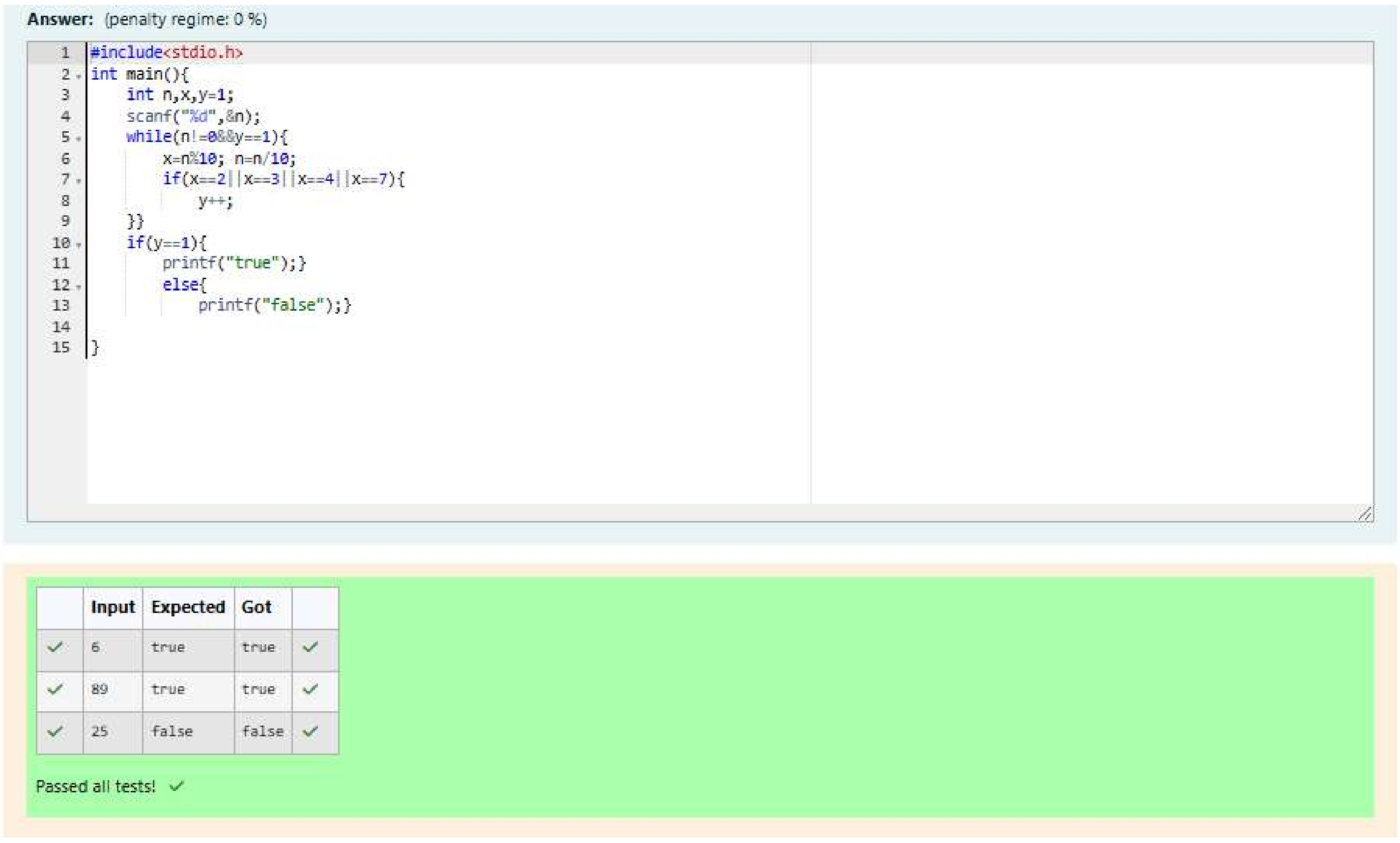
11 -> 11

Input: 11

Output: false

Explanation:

We get 11 after rotating 11, 11 is a valid number but the value remains the same, thus 11 is not a confusing number.



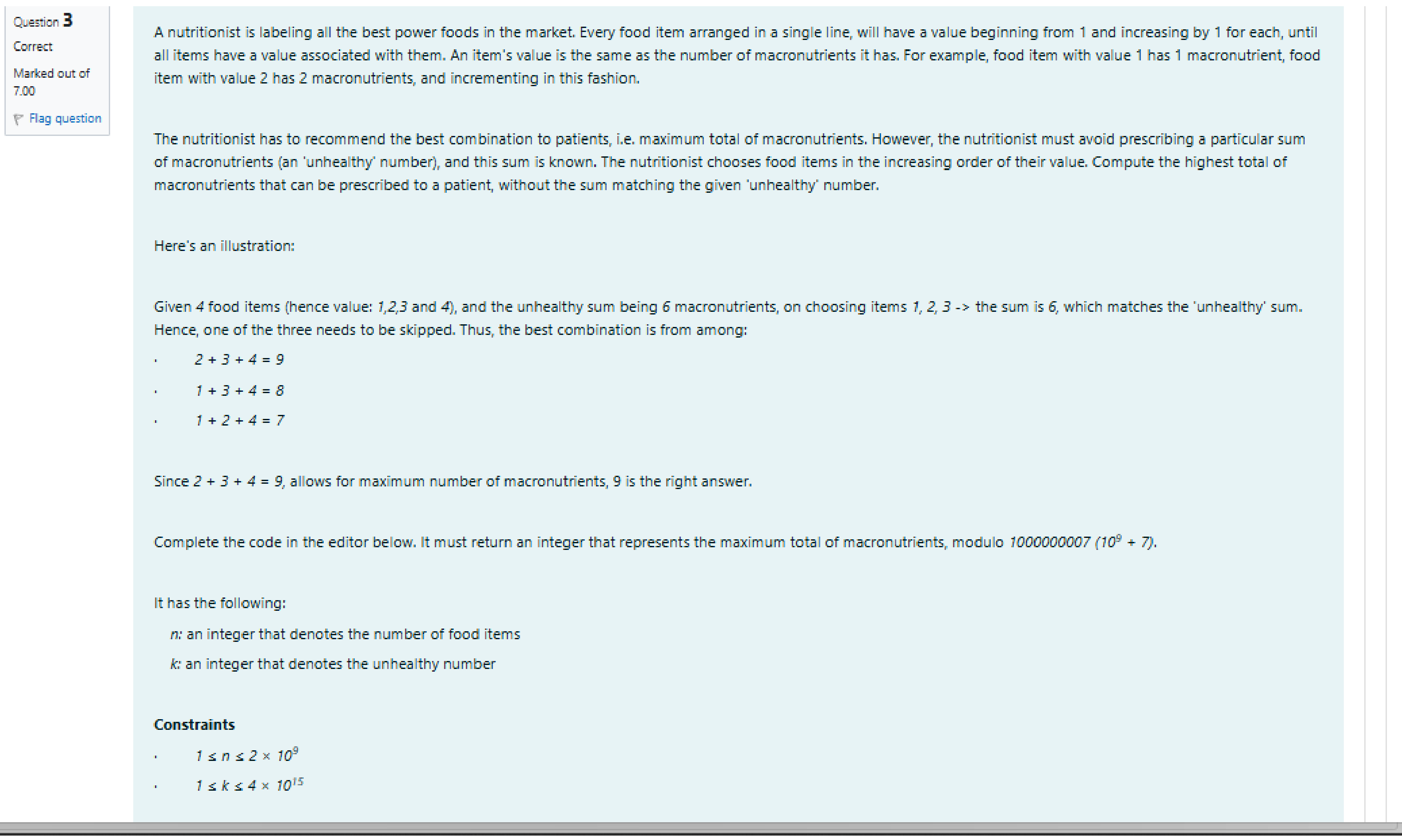
Answer: (penalty regime: 0 %)

```
#include<stdio.h>
int main(){
    int n,x,y=1;
    scanf("%d",&n);
    while(n!=0&&y==1){
        x=n%10; n=n/10;
        if(x==2||x==3||x==4||x==7){
            y++;
    }}
    if(y==1){
        printf("true");}
        else{
            printf("false");}

}
```

	Input	Expected	Got	
✓	6	true	true	✓
✓	89	true	true	✓
✓	25	false	false	✓

Passed all tests! ✓



Question **3**

Correct

Marked out of 7.00

Flag question

A nutritionist is labeling all the best power foods in the market. Every food item arranged in a single line, will have a value beginning from 1 and increasing by 1 for each, until all items have a value associated with them. An item's value is the same as the number of macronutrients it has. For example, food item with value 1 has 1 macronutrient, food item with value 2 has 2 macronutrients, and incrementing in this fashion.

The nutritionist has to recommend the best combination to patients, i.e. maximum total of macronutrients. However, the nutritionist must avoid prescribing a particular sum of macronutrients (an 'unhealthy' number), and this sum is known. The nutritionist chooses food items in the increasing order of their value. Compute the highest total of macronutrients that can be prescribed to a patient, without the sum matching the given 'unhealthy' number.

Here's an illustration:

Given *4* food items (hence value: *1,2,3* and *4*), and the unhealthy sum being *6* macronutrients, on choosing items *1, 2, 3* -> the sum is *6*, which matches the 'unhealthy' sum. Hence, one of the three needs to be skipped. Thus, the best combination is from among:

- $2 + 3 + 4 = 9$
- $1 + 3 + 4 = 8$
- $1 + 2 + 4 = 7$

Since $2 + 3 + 4 = 9$, allows for maximum number of macronutrients, 9 is the right answer.

Complete the code in the editor below. It must return an integer that represents the maximum total of macronutrients, modulo *1000000007* ($10^9 + 7$).

It has the following:

n: an integer that denotes the number of food items

k: an integer that denotes the unhealthy number

Constraints

- $1 \le n \le 2 \times 10^9$
- $1 \le k \le 4 \times 10^{15}$