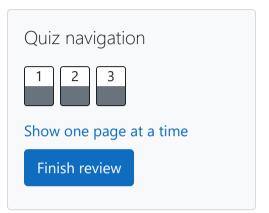
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# GE23131-Programming Using C-2024



Status	Finished		
Started	Monday, 23 December 2024, 5:33 PM		
Completed	Tuesday, 19 November 2024, 11:29 PM		
Duration	33 days 18 hours		

#### 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<=N<=10000
Sample Input and Output
Input
3
6
7
Output
Yes
Yes
No
Answer: (penalty regime: 0 %)
   1 #include<stdio.h>
   2 int main()
   3 √ {int t,n,x;
   4 scanf("%d",&t);
   5 while(t--)
   6 {scanf("%d",&n);
      x=n/4;
```

	Input	Expected	Got	
<b>~</b>	3	Yes	Yes	~
	1	Yes	Yes	
	6	No	No	
	7			

Passed all tests! <

Question  $\bf 2$ 

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:



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

2



```
Sample Case 1
Sample Input
1288
Sample Output
4
Explanation
Add the holes count for each digit, 1, 2, 8, 8. Return 0 + 0 + 2 + 2 = 4.
Answer: (penalty regime: 0 %)
   1 #include<stdio.h>
   2 int main()
   3 ▼ {int num,holes=0;
      int holescount[10]={1,0,0,0,1,0,1,0,2,1};
      scanf("%d",&num);
   6 while(num>0)
   7 ▼ {int digit=num%10;
      holes+=holescount[digit];
      num/=10;
  10
      printf("%d\n",holes);
  12 return 0;
```

Add the holes count for each digit, 6, 3 and 0. Return 1 + 0 + 1 = 2.

	Input	Expected	Got	
~	630	2	2	~
~	1288	4	4	~

Passed all tests! <

Question  ${\bf 3}$ 

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



# **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**

# Refer the sample output for formatting

# Sample Input 1:

10

# **Sample Output 1:**

4

#### 7



# **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.



```
2  int main()
3  v {int sum,count,value;
4  scanf("%d",&value);
5  sum=1;
6  while(sum<=value)
7  v {sum*=2;
  count++;
9  }
10  printf("%d",count);
  return 0;
11  return 0;
}</pre>
```

	Input	Expected	Got	
~	10	4	4	~
~	5	3	3	~
~	20	5	5	~
~	500	9	9	~
~	1000	10	10	<b>~</b>

Passed all tests! ✓



