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Problem Statement:

AliceandBobare playinga game called"StoneGame".Stonegame isa twoplayer 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 canwin, if both playthegame 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".

Constraints1<=*T*<=*10001*<=*N*<=*10000 Sample*

Input

3

7

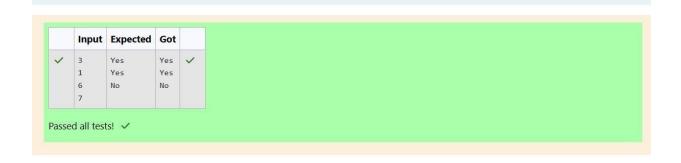
SampleOutput Yes

Yes

No

Answer: (penalty regime: 0 %)

```
#include<stdio.h>
   int main(){
 2 *
        int T,N;
 3
        scanf("%d",&T);
 4
        while(T--){
 5 1
             scanf("%d",&N);
 6
 7
             int alice=1;
 8 ,
        while(N>0){
 9 .
             if(alice){
10 .
                 if (N>=4){}
11
                     N-=4;
                 }
12
13 v
                 else{
14
                     N-=1;
15
16
             }
17 •
             else{
                 if(N>=4){
18 ,
19
                     N-=4;
20
                 }
                 else{
21 1
22
                     N-=1;
                 }
23
24
25
             alice=!alice;
26
             if(alice){
27 *
28
                 printf("No\n");
29
             }
30 ,
             else{
                 printf("Yes\n");
31
             }
32
33
34
        return 0;
35
36
   |}
```



Problem Statement:

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, 7 = 0 holes.

0, 4, 6, 9 = 1 hole.

8=2holes.

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 return an integer denoting the total number of holes in

num.

Constraints

 $1 \le num \le 109$

Input Format For Custom Testing

Thereisone line of textcontaining a single integer num, the value toprocess. Sample

Input

630

SampleOutput 2

Input	Expected	Got	
630	2	2	~
1288	4	4	~

Problem Statement:

The problems olvers 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

hispoint.

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 rangingfrom \$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

anyitem can be purchased one time ranging from \$1 to \$5. Everyonewas impressed with both of them. Your taskis 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

SampleInput1:

10

Sample Output 1:

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

Problem Statement:

AsetofNnumbers(separatedbyonespace)ispassedasinputtothe program. The program must identify the count of numbers where the number is odd number.

InputFormat:

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

$$3 <= N <= 50$$

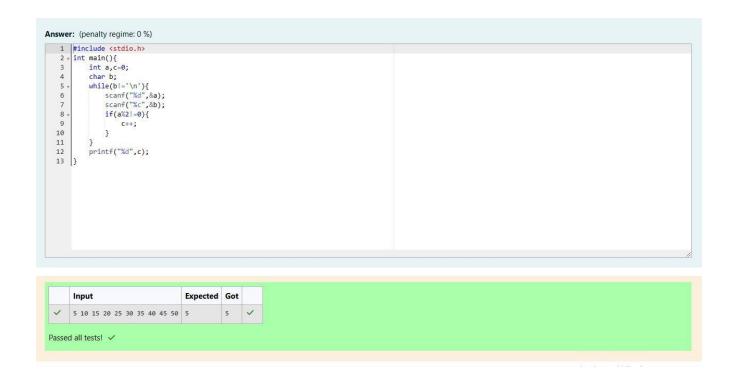
The value of the numbers can be from -99999999 to 99999999 Output

Format:

The count of numbers wherethe numbers are oddnumbers. Sample Input:

5 10 15 20 25 30 35 40 45 50

SampleOutput:



Problem Statement:

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

following condition:

We can rotatedigits by 180 degrees to form newdigits. When 0, 1, 6, 8, 9 are rotated 180

degrees,theybecome 0,1,9,8,6 respectively. When 2,3,4,5 and 7 are rotated 180 degrees, theybecome invalid. Aconfusing number is a number that when rotated 180 degrees becomes a different number with each digit valid.

Example 1:

Input: 6 Output:

1	111	1	0
1.1	<i>l l l</i>	1.	r.

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

Example 2:

Input: 89 Output:

true

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

Example 3:

Input: 11 Output:

false

Explanation: We get 11 after rotating 11, 11 is a valid number but the value remains the

same,thus11isnotaconfusingnumber. Example 4:

Input: 25 Output:

false

Explanation: We get an invalid number after rotating 25. Note:

2. After the rotation we can ignore leading zeros, for example if after rotation we have

0008 then this number is considered as just 8.



Problem Statement:

A nutritionist is labeling all the best power foods in the market. Every food item arrangedinasingle line, willhave 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'sanillustration: Given4fooditems(hencevalue: 1,2,3 and 4), and the unhealthysumbeing 6 macronutrients, onchoosing 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:

$$\bullet 2 + 3 + 4 = 9$$

$$\bullet$$
 1 + 3 + 4 = 8

$$\bullet$$
 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 (109 + 7). It has the following:

n:an integer that denotes the number of fooditems k: an integer that denotes the unhealthy number Constraints

•
$$1 \le n \le 2 \times 109$$

• $1 \le k \le 4 \times 1015$

Input Format For Custom Testing

The first line contains an integer, n, that denotes the number of food items. These condline contains an integer, k, that denotes the unhealthy number.

SampleInput0

2

2

Sample Output 0