

In [1]:

```

1  '''Question 1'''
2  '''Paul is given an array A of length N. He must perform the following operations sequentially:
3  array sequentially:
4  * Choose any two integers from the array and calculate their average.
5  * If an element is less than the average, update it to 0. However, if the
6  element is greater than or equal to the average, he need not update it.
7  Your task is to help Paul find and return an integer value, representing the minimum
8  possible sum of all the elements in the array by performing the above operations.
9  Input Format:
10 input1: An integer value N, representing the size of the array A.
11 input2: An integer array A.
12 Output Format:
13 Return an integer value, representing the minimum possible sum of all the elements
14 in the array by performing the above operations.
15 Sample Input
16 5
17 1 2 3 4 5
18 Sample Output
19 5'''
20 n=int(input())
21 arr=list(map(int,input().split()))
22 arr.sort()
23 element_1=arr[-1]
24 element_2=arr[-2]
25 avg=(element_1+element_2)/2
26 sum=0
27 for i in range(len(arr)):
28     if(arr[i]>=avg):
29         sum=sum+arr[i]
30 print(sum)
31

```

```

5
1 2 3 4 5
5

```

```

In [4]: 1  '''2) There is a ant on your balcony.It wants to leave the rail so someti
2  and sometimes it moves left until it gets exhausted.Given an integer array
3  which consists of integer 1 and -1 only representing ant's moves.
4  Where 1 means ant moved unit distance towards the right side and -1 means
5  unit distance towards the left .Your task is to find and return the integer
6  representing how many times the ant reaches back to original starting posi
7  Note:
8  * Assume 1-based indexing
9  * Assume that the railing extends infinitely on the either sides
10 Input Format:
11 input1 : An integer value N representing the number of moves made by the a
12 input2 : An integer array A consisting of the ant's moves towards either s
13
14 n=int(input())
15 a=list(map(int,input().split()))
16 count=0
17 for i in range(n):
18     if(sum(a[:i+1])==0):
19         count=count+1
20 print(count)

```

```

5
-1 1 -1 1 1
2

```

In [1]:

```

1  '''3) You are given an integer array of size N, representing jars of choco
2  students A, B, and C respectively, will pick chocolates one by one from ea
3  jar, till the jar is empty, and then repeat the same with the rest of the
4  is to find and return an integer value representing the total number of ch
5  student A will have, after all the chocolates have been picked from all th
6  Note: Once a jar is done A will start taking the chocolates from the new j
7  Input Format :
8  input1: An integer array representing the quantity of chocolates in each j
9  input2: An integer value N representing the number of jars.
10 Output Format:
11 Return an integer value representing the total number of chocolates that s
12 will have, after all the chocolates are picked.
13 Example:
14 Input:
15 10 20 30
16 3
17 Output:
18 21'''
19
20 arr=list(map(int,input().split()))
21 n=int(input())
22 c=0
23 for i in arr:
24     if i==0:
25         continue
26     if(i<=3):
27         c=c+1
28     else:
29         if(i%3==0):
30             c=c+i//3
31         else:
32             c=c+(i//3)+1
33 print(c)
34

```

10 20 30

3

21

In [2]:

```

1  '''
2  4) Max is having a dog . he want to find the age of the dog with respect
3  he came to know that , the age of the dog is measured with respect to huma
4  example: 1 year of life span of dog is same as seven years of life span
5  Now , calculate the age of MAX dog.
6  '''
7  human_age=int(input())
8  dog_age=human_age*7
9  print(dog_age)

```

25

175

```
In [2]: 1 #another way for above program
        2 #dog age
        3 def age_calculate(n):
        4     return n*7
        5 n=int(input())
        6 print(age_calculate(n))
```

25

175

```
In [3]: 1 '''5) Max is planning to take part in a Diwali contest at a Diwali Party
        2 PM and will run until midnight (12 AM) i.e., for 4 hours. He also needs to
        3 party venue within this time which takes him P minutes. The contest comprises
        4 of N problems that are arranged in order of difficulty, with problem 1 being
        5 simplest and problem N being the most difficult. Max is aware that he will
        6 minutes to solve the ith problem.
        7 Your task is help Max find and return an integer value, representing the maximum
        8 problems Max can solve and reach the party venue within the given time frame of
        9 hours.
        10 Note: Max will leave his home at exactly 8 PM to reach the party venue.
        11 Input Format:
        12 input1: An integer value N, representing the total number of problems.
        13 input2: An integer value P, Representing the time to travel in minutes from home
        14 to the party venue.'''
        15 n=int(input())
        16 p=int(input())
        17 cal=240-p
        18 count=0
        19 for i in range(1,n+1):
        20     if(cal>0 and cal>5*i):
        21         cal=cal-5*i
        22         count=count+1
        23 print(count)
```

20

30

8

In [6]:

```

1  '''6) The function accepts two positive integers 'r' and 'unit' and a posi
2  'arr' of size 'n' as its argument 'r' represents the number of rats preser
3  'unit' is the amount of food each rat consumes and each ith element of ar
4  represents the amount of food present in 'i+1' house number, where 0 <= i
5  Note:
6
7  Return -1 if the array is null
8  Return 0 if the total amount of food from all houses is not sufficient for
9  Computed values lie within the integer range.
10 Example:
11
12 Input:
13
14 r: 7
15 unit: 2
16 n: 8
17 arr: 2 8 3 5 7 4 1 2
18 Output:
19
20 4
21
22 Explanation:
23 Total amount of food required for all rats = r * unit
24
25 = 7 * 2 = 14.
26
27 The amount of food in 1st houses = 2+8+3+5 = 18. Since,
28 amount of food in 1st 4 houses is sufficient for all the rats.
29 Thus, output is 4'''
30
31 def calculate(r,unit,arr):
32
33     if(len(arr)==0):
34         return -1
35     total=r*unit
36     total_req=sum(arr)
37     if(total<total_req):
38         return total
39     else:
40         return -1
41 r=int(input())
42 unit=int(input())
43 n=int(input())
44 arr=list(map(int,input().split()))
45 print(calculate(r,unit,arr))
46

```

```

7
2
8
2 8 3 5 7 4 1 2
14

```

In [19]:

```

1  '''7) The Binary number system only uses two digits, 0 and 1 and number sy
2  You are required to implement the following function:
3
4  int OperationsBinaryString(char* str);
5
6  The function accepts a string str as its argument.
7  The string str consists of binary digits eparated with an alphabet as foll
8
9  - A denotes AND operation
10 - B denotes OR operation
11 - C denotes XOR Operation
12 You are required to calculate the result of the string str, scanning the s
13
14 Note:
15
16 No order of priorities of operations is required
17 Length of str is odd
18 If str is NULL or None (in case of Python), return -1
19 Input:
20 str: 1C0C1C1A0B1
21
22 Output:
23 1
24
25 Explanation:
26 The alphabets in str when expanded becomes "1 XOR 0 XOR 1 XOR 1 AND 0 OR 1
27 result of the expression becomes 1, hence 1 is returned.
28
29 Sample Input:
30 0C1A1B1C1C1B0A0
31
32 Output:
33 0'''
34
35 def OperationsBinaryString(str):
36     a=int(str[0])
37     i=1
38     while(i<len(str)):
39         if(str[i]=="A"):
40             a=a&int(str[i+1])
41         elif(str[i]=="B"):
42             a=a|int(str[i+1])
43         else:
44             a=a^int(str[i+1])
45         i=i+2
46     return a
47 str=input()
48 print(OperationsBinaryString(str))

```

0C1A1B1C1C1B0A0

0

In [18]:

```

1  '''8) You are given a function,
2  int findCount(int arr[], int length, int num, int diff);
3
4  The function accepts an integer array 'arr', its length and two integer va
5  Implement this function to find and return the number of elements of 'arr'
6  difference of less than or equal to 'diff' with 'num'.
7  Note: In case there is no element in 'arr' whose absolute
8  difference with 'num' is less than or equal to 'diff', return -1.
9
10 Example:
11 Input:
12
13 arr: 12 3 14 56 77 13
14 num: 13
15 diff: 2
16 Output:
17 3
18
19 Explanation:
20 Elements of 'arr' having absolute difference of less than or equal to 'dif
21 i.e. 2 with 'num' i.e. 13 are 12, 13 and 14.'''
22
23 def findCount(n,arr,num,diff):
24     c=0
25     for i in range(len(arr)):
26         if(abs(arr[i]-num)<=diff):
27             c+=1
28     if c:
29         return c
30     return 0
31 n=int(input())
32 arr=list(map(int,input().split()))
33 num=int(input())
34 diff=int(input())
35 print(findCount(n,arr,num,diff))

```

```

6
12 3 14 56 77 13
13
2
3

```

In [17]:

```
1  '''
2  9) Toss and score
3  You are playing a game of Toss and Score in the Hillwood City Mall with yo
4  The game consists of the following rules:
5  Toss an unbiased coin multiple times.
6  For each heads you get 2 points and for each tails you lose 1 point.
7  The game ends as soon as you get 3 heads in a row, or you toss the coin th
8  the length of string S.
9  You have been given a string S consisting of letters H (for heads) and T (
10 denoting the sequence results you get on the toss of coin N times. Your ta
11 and return an integer value representing the final score you get once the
12 Note: The final score can be negative too.
13 Input Specification:
14 Input1: A string s. representing the sequence of results you get on the to
15 Sample Input:
16 HHHTT
17 Output:
18 6
19 '''
20 toss=input()
21 head=0
22 score=0
23 for i in toss:
24     if(i=='H'):
25         head+=1
26         score+=2
27         if(head==3):
28             break
29     else:
30         score-=1
31         head=0
32 print(score)
33
```

HHHTT

6

In [16]:

```

1  '''10) Nearest Corner
2  Bruce is a newly hired employee at a company. The Office Management Depart
3  has given him a desk number, which is stored in string S. He has also been
4  string array A. containing all the N office desk numbers.
5  Array A also includes the symbol "-", which stands for the gap in the sittin
6  arrangement. Comer seats are those that are on either side of the gap. You
7  help Bruce find and return an integer value. representing how far he is fro
8  nearest corner seat. Return 0, if he is in the corner seat.
9  Note:
10 There will always be at least one gap in the string array A
11 Desk number is always in a format of a number first followed by an English
12 uppercase
13 Assume 0 - based indexing
14 Input Specification:
15 A string S. representing Bruce's newly assigned desk number.
16 Second line containing space seperated strings showing the seat positions
17 Sample input:
18 3C
19 1A 2B - 3C 4D
20 Sample Output:
21 0
22 '''
23 input1=input()
24 input2=input().split()
25 x=input2.index(input1)
26 z=float("inf")
27 for i in range(x+1,len(input2)):
28     if(input2[i]=="-"):
29         z=min(abs(i-x)-(1),z)
30 for i in range(x):
31     if(input2[i]=="-"):
32         z=min(abs(i-x)-(1),z)
33 print(z)
34
35
36
37

```

```

3C
1A 2B - 3C 4D
0

```

In [4]:

```
1  '''
2  11) Boring Arrays
3  You are given an array A of size N. In one operation you can select any two
4  from it, add their absolute difference in your score.
5  Your task is to find and return an integer value, representing the maximum
6  Note:
7  Assume 1 based indexing
8  The elements on which operation has been performed cannot be selected again
9  Input Specification:
10 Input1: An integer value N, representing the size of array A
11 input2: An integer array A
12 Output Specification:
13 Return an integer value, representing the maximum score
14 Sample Input:
15 4
16 1 2 3 4
17 Sample Output:
18 4
19 '''
20 n=int(input())
21 a=list(map(int,input().split()))
22 a.sort()
23 start=0
24 end=-1
25 res=[]
26 while(len(a)>1):
27     res.append(abs(a[start]-a[end]))
28     a.pop(start)
29     a.pop(end)
30 print(sum(res))
```

```
4
1 2 3 4
4
```

In [12]:

```

1  '''
2  12) Problem Statement:
3  In a quaint village nestled between rolling hills, there were N different
4  and N different pepper containers in two separate groups. Each container h
5  specific level of bitterness, represented by arrays A and B respectively.
6  hand was to form N combinations, each consisting of one salt container and
7  pepper container
8  However, there was a twist to the challenge. The objective was to arrange
9  combinations in such a way that the maximum bitterness level, which is the
10 salt and pepper quantities in each combination, was minimized.
11 Print the lowest possible maximum bitterness level.
12 Input Format:
13 The first line contains a single integer N, the number of salt and pepper
14 each group.
15 The second line contains N space-separated integers, denoting the bitterne
16 N salt containers.
17 The third line contains N space-separated integers, denoting the bitterne
18 Sample Input:
19 3
20 1 3 5
21 2 8 6
22 Sample Output:
23 11
24
25 '''
26
27 def solver(n,salt,pepper):
28     #salt=0
29     #pepper=0
30     r=[]
31     for i in range(len(salt)):
32         r.append(salt[i]+pepper[i])
33     return max(r)
34 n=int(input())
35 salt=list(map(int,input().split()))
36 pepper=list(map(int,input().split()))
37 print(solver(n,salt,pepper))
38

```

```

3
1 3 5
2 8 6
11

```

In [2]:

```

1  '''13) Angela has decided to throw a pizza party. she has ordered N number
2  served to her N number of friends. In this way, she will be serving only c
3  each friend.
4  She now wants to invite fewer people to her party in order to provide more
5  person. But at the same time, she wants to ensure that there are at least
6  her party.
7  Your task is to help Angela find and return an integer value, representing
8  digits of the minimum number of friends that she can invite to the party,
9  that each person gets an equal number of pizzas
10 Sample Input:
11 100 17
12 Sample Output:2'''
13 def sum_of_digits(n):
14     return sum(int(digit) for digit in str(n))
15
16 def min_friends_and_sum(N, Y):
17     for f in range(Y, N+1):
18         if N % f == 0:
19             return sum_of_digits(f)
20     return sum_of_digits(N)
21
22 N = int(input())
23 Y = int(input())
24
25 result = min_friends_and_sum(N, Y)
26 print(result)

```

```

100
17
2

```

In [4]:

```

1  '''14) happy fathers day extract the vowel which has max count'''
2
3  str=input()
4  a=e=i=o=u=0
5  for j in str:
6      if(j=='a'):
7          a+=1
8      if(j=='e'):
9          e+=1
10     if(j=='i'):
11         i+=1
12     if(j=='o'):
13         o+=1
14     if(j=='u'):
15         u+=1
16 print(max(a,e,i,o,u))
17

```

```

happy fathers day extract the vowel which has max count
6

```

```
In [3]: 1 '''15) which has occurred more times'''
2 def vowels(str):
3     first=0
4     h=['a','e','r','o','u']
5     for i in str:
6         if(i in h):
7             first=i
8             break
9     for i in str:
10        if(i==first):
11            return i
12 str=input()
13 print(vowels(str))
```

happy fathers day

a

```
In [28]: 1 '''16) You work in the message encoding department of a national security
2 that is sent from or received in your office is encoded. you have a string
3 of N is squared and the squares are concatenated together to encode the or
4 Your task is to find and return an integer value representing the encoded
5 number.
6 input1: An a string representing the number and chracters
7 Output :
8 Return an integer value representing the encoded value of the number
9 input format:
10 "hello 123 good morning"
11 output:
12 149'''
13 def call(str):
14     lis=[]
15     res=""
16     for i in str:
17         if i.isdigit():
18             lis.append(int(i))
19     #print(lis)
20     for i in lis:
21         res=(i**2)
22         print(res,end='')
23     return" "
24 str=input()
25 print(call(str))
26
```

hello 123 good morning

149

In [1]:

```

1  '''
2  17) Equilibrium
3  You are given an array A of N integers. An equilibrium position is a position
4  such that the sum of all integers on its left is equal to the sum of all integers on its
5  right. Print the index of the equilibrium position.
6  Note:For any given array there is only a single equilibrium position, if no
7  position is found then print "NOT FOUND" without quotes.
8  The array is 1 indexed.
9  Input Format:
10 The input consists of two lines:
11 The first line contains an integer denoting N.
12 The second line contains N space-separated integers denoting the elements
13 of the array A.
14 Input will be read from the STDIN by the candidate
15 Output Format:
16 Print the index of the equilibrium position. If no index is found, print
17 "NOT FOUND"
18 Sample Input
19 5
20 2 4 3 2 7
21 Sample Output
22 3
23 '''
24 a=int(input())
25 arr=list(map(int,input().split()))
26 flag=True
27 for j in range(len(arr)):
28     if sum(arr[:j])==sum(arr[j+1:]):
29         flag=False
30         print(j+1)
31         break
32 if flag:
33     print("NOT FOUND")
34
35 #wrong output

```

```

5
2 4 3 2 7
1
NOT FOUND

```

In [7]:

```
1  '''
2  18) Signature for LCM
3  Given two numbers a and b. Find the GCD and LCM of and d.
4  Input:
5  * Two positive integers a and b (1 <=a, b <=1000)
6  Output:
7  For GCD function, an integer representing the GCD of a 'and b
8  For LCM function, an integer representing the LCM of a and b
9  Sample Input:
10 12 18
11 Output:
12 6
13 36
14
15 '''
16 def gcd(a,b):
17     while(b>0):
18         temp=a
19         a=b
20         b=temp%b
21     return a
22 def lcm(a,b):
23     return (a*b)//gcd(a,b)
24
25 a=int(input())
26 b=int(input())
27
28 print(gcd(a,b))
29 print(lcm(a,b))
```

12

18

6

36

In [7]:

```

1  '''19) Pangram is a sentence containing every letter in the English alphabet.
2  find all characters that are missing from the string, i.e., the characters
3  the string a Pangram We need to print output in alphabetic order.
4  For example,
5  Input: welcome to geeksforgeeks
6  Output: abdhijnpquvwxyz'''
7  def alphabet(str):
8      str.lower()
9      answer="abcdefghijklmnopqrstuvwxyz"
10     result=[]
11     for i in answer:
12         if i not in str:
13             result.append(i)
14     print(''.join(result))    #this for joining the output eg: abcd
15     result.sort()
16     #print(*result)          #this will give a output as eg: a b c d
17     return ""
18 str=input()
19 print(alphabet(str))

```

```

Welcome to geeksforgeeks
abdhijnpquvwxyz

```

In [6]:

```

1  '''20) You are given a string containing words separated by spaces. Your task
2  is to write a function or program that reverses the order of words in the string.
3  Sample Input:
4  Hello World
5  Sample Output:
6  World Hello'''
7
8  def alp(str):
9      for i in str:
10         x=str.split()
11
12         print(*x[::-1])
13         return " "
14 str=input()
15 print(alp(str))

```

```

hello world
world hello

```



```
In [5]: 1  '''20A) You are given a string containing words separated by spaces. Your
2  function or program that reverses the order of words in the string.
3  Sample Input:
4  Hello World
5  Sample Output:
6  World Hello'''
7
8  #another method for above pgm
9
10 str=input().split()
11 str=str[::-1]
12 print(*str)
```

```
hello world
world hello
```

```
In [4]: 1  '''21) reversing string'''
2  def alp(str):
3      for i in str:
4          str.split()
5
6      print(str[::-1])
7      return " "
8  str=input()
9  print(alp(str))
```

```
hello world
dlrow olleh
```

```
In [3]: 1  '''22) Number of toys
2  Akshay has a number of toys and he decided to donate some of them to an NGO
3  the donation, he still has some toys left. Write a program to help Akshay
4  the number of remaining toys.
5  Example:
6  Input: 50 45
7  Output: The remaining number of toys = 5
8  Input: 60 6
9  Output: The remaining number of toys = 54'''
10 def toys(a,b):
11     return a-b
12 a=int(input())
13 b=int(input())
14 print("The remaning number of toys = ",toys(a,b))
15
16
17
18
```

```
50
45
The remaning number of toys = 5
```

```
In [2]: 1  '''23) Smallest Number
2  Prince participated in three Olympiads at school and received marks for all
3  He is interested in finding out the lowest mark he obtained among the three
4  Olympiads. Write a program to find the minimum mark.
5  Example:
6  Input: 50 66 23
7  Output: Smallest number is 23'''
8
9  def number(arr):
10
11      return min(arr)
12  arr=list(map(int,input().split()))
13  print(number(arr))
```

```
50 66 23
23
```

```
In [5]: 1  '''24) snippet attempting'''
2  input_1=int(input())
3  result=input_1*1
4  num=2
5  for i in range(input_1-1,0,-1):
6      result+=2*i*num
7      num+=1
8  print(result)
```

```
5
65
```

```
In [6]: 1  '''25) PALINDROME'''
2  str=input()
3  x=str.lower()
4  y=(x[::-1])
5  if x==y:
6      print("palindrome")
7  else:
8      print("not palindrome")
9
```

```
madam
palindrome
```