09- Functions

Ex. No. : 9.1 **Date: 01.06.24**

Register No.: 230701373 **Name: SP VARUN**

Christmas Discount

An e-commerce company plans to give their customers a special discount for Christmas. They are planning to offer a flat discount. The discount value is calculated as the sum of all the prime digits in the total bill amount.

Write an python code to find the discount value for the given total bill amount.

Constraints

1 <= orderValue< $10e^{100000}$

Input

The input consists of an integer orderValue, representing the total bill amount.

Output

Print an integer representing the discount value for the given total bill amount.

Example Input

578

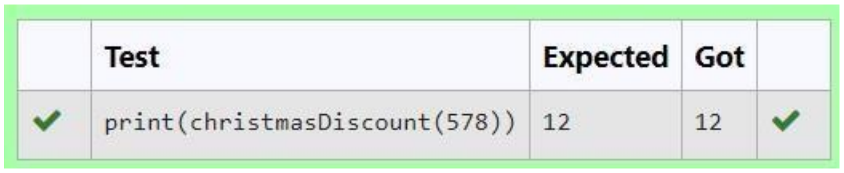
Output

12

For example:

Test	Result
print(christmasDiscount(578))	12

Program:
```
def
is_prime_digit(digit):
return digit in [2,3,5,7]
def
christmasDiscount(n):
s=discount=0
prime_digitis=[2,3,5,7]
for digit in str(n):
digit=int(digit)        if
is_prime_digit(digit):
        discount+=digit
return discount
```



	Test	Expected	Got	
✓	print(christmasDiscount(578))	12	12	✓

Ex. No. : 9.2 **Date: 01.06.24**

Register No.: 230701373 **Name: SP VARUN**

Check Product of Digits

Write a code to check whether product of digits at even places is divisible by sum of digits at odd place of a positive integer.

Input Format:

Take an input integer from stdin.

Output Format:

Print TRUE or FALSE.

Example Input:

1256

Output:

TRUE

Example Input:

1595

Output:

FALSE

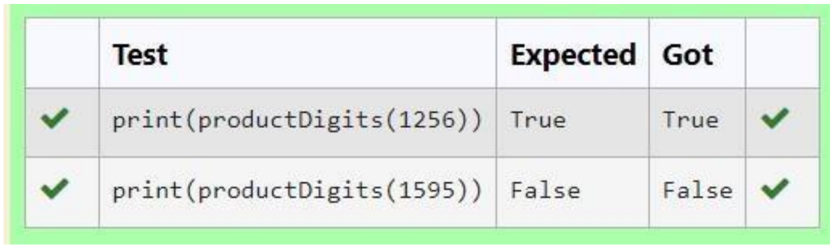
For example:

Test	**Result**
print(productDigits(1256))	True

print(productDigits(1595))	False

Program:

```
def productDigits(n):     a=n

temp=[]     list1=[]

list2=[]     rem=0     while

a!=0:         rem=a%10

temp.append(rem)

a=a//10     for i in

range(len(temp)):

if(i+1)%2==0:

list1.append(temp[i])

else:

            list2.append(temp[i])

pro=1     sum=0

    for i in list1:

sum+=i    for   i

in list2:

pro*=i

    if pro%sum==0:

        return True

else:

        return False
```



	Test	Expected	Got	
✓	print(productDigits(1256))	True	True	✓
✓	print(productDigits(1595))	False	False	✓

Ex. No. : 9.3 **Date: 01.06.24**

Register No.: 230701373 **Name: SP VARUN**

<u>Abundant Number</u>

An abundant number is a number for which the sum of its proper divisors is greater than the number itself. Proper divisors of the number are those that are strictly lesser than the number.

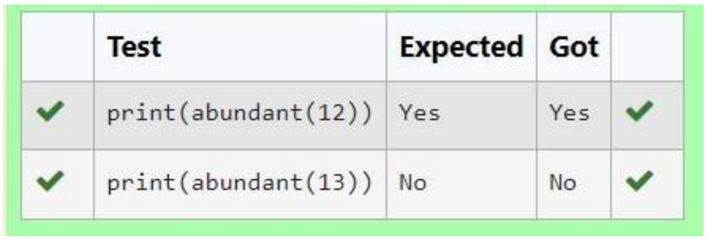
Input Format:
Take input an integer from stdin **Output Format:**
Return Yes if given number is Abundant. Otherwise, print No **Example input:**
12
Output:
Yes
Explanation
The proper divisors of 12 are: 1, 2, 3, 4, 6, whose sum is 1 + 2 + 3 + 4 + 6 = 16. Since sum of proper divisors is greater than the given number, 12 is an abundant number. **Example input:**
13
Output:
No
Explanation
The proper divisors of 13 is: 1, whose sum is 1. Since sum of proper divisors is not greater than the given number, 13 is not an abundant number.

For example:

Test	Result
print(abundant(12))	Yes
print(abundant(13))	No

Program:

```
def abundant(number):

   d_s=sum([divisor for divisor in range(1,number) if number % divisor == 0])

if d_s>number:        return"Yes"

   else:

       return "No"
```



	Test	Expected	Got	
✓	print(abundant(12))	Yes	Yes	✓
✓	print(abundant(13))	No	No	✓

Ex. No. : 9.4 **Date: 01.06.24 Register No.: 230701373** **Name SP VARUN**

Ugly number

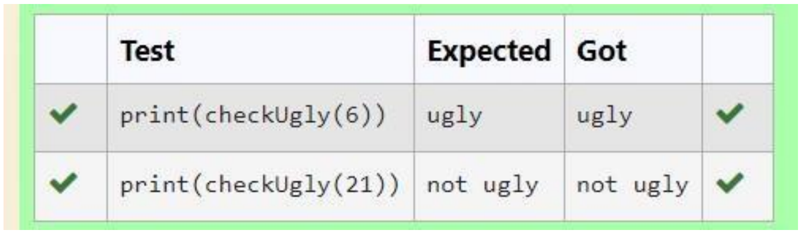
A number is considered to be ugly if its only prime factors are 2, 3 or 5. [1, 2, 3, 4, 5, 6, 8, 9, 10, 12, 15, ...] is the sequence of ugly numbers.
Task:
complete the function which takes a number n as input and checks if it's an ugly number.
return ugly if it is ugly, else return not ugly Hint:
An ugly number U can be expressed as: U = 2^a * 3^b * 5^c, where a, b and c are nonnegative integers. **For example:**

Test	Result
print(checkUgly(6))	ugly

print(checkUgly(21))	not ugly

Program:

```
def checkUgly(n):
    if n <= 0:
        return "not ugly”
while n % 2 == 0:
        n //= 2
    while n % 3 == 0:
        n //= 3
    while n % 5 == 0:
        n //=5
    return "ugly" if n == 1 else "not ugly"
```



	Test	Expected	Got	
✓	print(checkUgly(6))	ugly	ugly	✓
✓	print(checkUgly(21))	not ugly	not ugly	✓

Ex. No. : 9.5 **Date: 01.06.24**

Register No.: 230701373 **Name SP VARUN**

Automorphic number or not

An automorphic number is a number whose square ends with the number itself. For example, 5 is an automorphic number because 5*5 =25. The last digit is 5 which same as the given number.

If the number is not valid, it should display “Invalid input”.
If it is an automorphic number display “Automorphic” else display “Not Automorphic”.

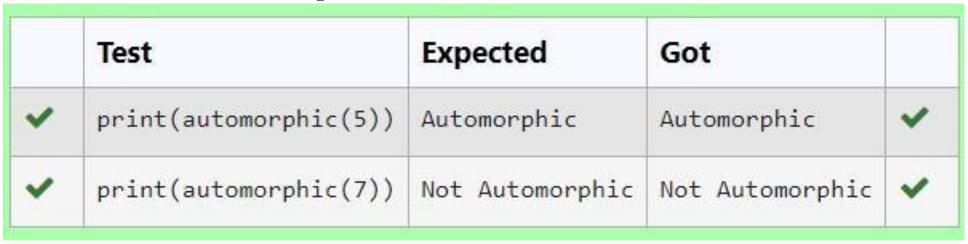
Input Format:
Take a Integer from Stdin Output
Format:
Print Automorphic if given number is Automorphic number, otherwise Not Automorphic Example input: 5 Output: Automorphic Example input: 25 Output: Automorphic Example input: 7 Output: Not Automorphic **For example:**

Test	Result
print(automorphic(5))	Automorphic

Program:

```
def automorphic(n):

   if(n<0):

       return "Invalid input"

square = n * n   n_s=str(n)

s_s=str(square)              if
```

```
s_s.endswith(n_s):

return "Automorphic"

    else:

        return "Not Automorphic"
```



	Test	Expected	Got	
✓	print(automorphic(5))	Automorphic	Automorphic	✓
✓	print(automorphic(7))	Not Automorphic	Not Automorphic	✓