Question 1:

Please write a program using generator to print the numbers which can be divisible by 5 and 7 between 0 and n in comma separated form while n is input by console.

Example:  
If the following n is given as input to the program:

100

Then, the output of the program should be:

0,35,70

def divisible\_by\_5\_and\_7(n):

for i in range(n):

if i % 5 == 0 and i % 7 == 0:

yield i

n = int(input("Enter a value for n: "))

print(", ".join(str(i) for i in divisible\_by\_5\_and\_7(n)))

Question 2:

Please write a program using generator to print the even numbers between 0 and n in comma separated form while n is input by console.

Example:  
If the following n is given as input to the program:

10

Then, the output of the program should be:

0,2,4,6,8,10

def even\_number(n):

for i in range(n+1):

if i % 2 == 0:

yield i

n = int(input("Enter the value of n: "))

print(", ".join(str(i) for i in even\_number(n)))

Question 3:

The Fibonacci Sequence is computed based on the following formula:

f(n)=0 if n=0  
f(n)=1 if n=1  
f(n)=f(n-1)+f(n-2) if n>1

Please write a program using list comprehension to print the Fibonacci Sequence in comma separated form with a given n input by console.

Example:  
If the following n is given as input to the program:

7

Then, the output of the program should be:

0,1,1,2,3,5,8,13

def fibonacci(n):

if n == 0:

return [0]

elif n == 1:

return [0, 1]

else:

sequence = [0, 1]

for i in range(2, n+1):

sequence.append(sequence[i-1] + sequence[i-2])

return sequence

n = int(input("Enter a value for n: "))

print(", ".join(str(i) for i in fibonacci(n)))

Question 4:

Assuming that we have some email addresses in the "[username@companyname.com](mailto:username@companyname.com)" format, please write program to print the user name of a given email address. Both user names and company names are composed of letters only.

Example:  
If the following email address is given as input to the program:

[john@google.com](mailto:john@google.com)

Then, the output of the program should be:

John

def get\_username(email):

# Split the email address by '@'

username, domain = email.split('@')

return username

email = input("Enter email adress:")

print(get\_username(email))

Question 5:

Define a class named Shape and its subclass Square. The Square class has an init function which takes a length as argument. Both classes have a area function which can print the area of the shape where Shape's area is 0 by default.

class Shape:

def area(self):

return 0

class Square(Shape):

def \_\_init\_\_(self, length):

self.length = length

def area(self):

return self.length\*self.length

square = Square(4)

print(square.area())