```
Caitlin Sisilli
Homework 2:
       Question 1)
class Country:
  def __init__(self,cName="",cPopulation=0,sqMile=0,cDensity=0):
    self.cName=cName
    self.cPopulation=cPopulation
    self.sqMile=sqMile
    self.cDensity=cDensity
  def Destiny(self):
    return self.cPopulation/self.sqMile
  def Record(self, cName,cPopulation,sqMile):
    self.cName=cName
    self.cPopulation=cPopulation
    self.sqMile=sqMile
    self.cDensity=self.Destiny()
  def prints(self):
```

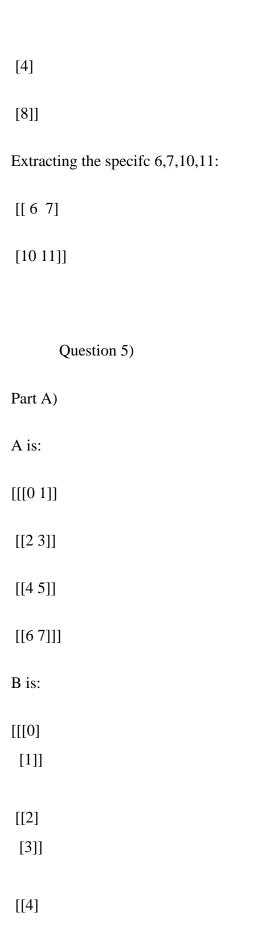
print("Country Name: ",self.cName)

```
print("Population Number: ",self.cPopulation)
    print("Miles: ",self.sqMile)
    print("Density: ",self.cDensity)
call=Country()
call.Record("Canada", 1000,10)
call.prints()
Output:
Country Name: Canada
Population Number: 1000
Miles: 10
Density: 100.0
       Question 2)
class Rectangle():
  def __init__(self,length,width):
    self.length =int(length)
    self.width= int(width)
  def rectangle_area(self):
```

```
return self.width*self.length
  def display(self):
    print("Length: ", self.length)
    print("Width: ",self.width)
    print("Area: ",self.rectangle_area())
newRectangle = Rectangle(12, 10)
newRectangle.display()
Output:
Length: 12
Width: 10
Area: 120
       Question 3)
import numpy as np
A = np.arange(10)
A
print("The array is: ", A)
print("The array reverse is: ", A[::-1])
print("The array's last element: ", A[-1])
```

```
Output:
The array is: [0 1 2 3 4 5 6 7 8 9]
The array reverse is: [9 8 7 6 5 4 3 2 1 0]
The array's last element: 9
Part c)
import numpy as np
A = np.arange(10)
A
def split(A):
  evenList=[]
  for i in A:
    if(i%2==0):
       evenList.append(i)\\
  print("Even numbers from list: ",evenList)
print(split(A))
Output:
Even numbers from list: [0, 2, 4, 6, 8]
       Question 4)
```

```
import numpy as np
B = np.arange(0, 12).reshape(3, 4)
В
print(B)
print("The first and second columnns: \n", B[:,[0,1]])
print("The first and second rows: \n",B[:,0:1])
print("Extracting the specifc 6,7,10,11: \n", B[1:,2:])
Output:
[[0 1 2 3]
[4 5 6 7]
[8 9 10 11]]
The first and second columuns:
[[0 \ 1]]
[4 5]
[8 9]]
The first and second rows:
[[0]]
```



- [5]]
- [[6]
- [7]]]
- Part B)
- $[[[\ 0\ \ 1]$
- [12]]
- [[4 5]
- [5 6]]
- [[8 9]
- [9 10]]
- [[12 13]
- [13 14]]]
- Part C)
- [[[0 1]
- [-1 0]]
- [[0 1]
- [-1 0]]
- [[0 1]
- [-1 0]]
- [[0 1]
- [-1 0]]]

Part D)

[[[0 0]]

[0 1]]

[[4 6]

[6 9]]

[[16 20]

[20 25]]

[[36 42]

[42 49]]]