Task-8-1:

```
import numpy as np
start=int(input("First Number:"))
end=int(input("Last Number:"))
a1=np.array([i for i in range(start,(end+1),1)])
num=5
a2=np.zeros(len(a1)+((len(a1)-1)*num))
a2[0:len(a2):(num+1)]=a1
print(a2)
```

```
Task-8-1
C:\Users\Home\PycharmProjects\PycharmProject\venv\Scripts\python.exe C:/Use
First Number:11
Last Number:15
[11.  0.  0.  0.  0.  0. 12.  0.  0.  0.  0.  0. 13.  0.  0.  0.  0.  0.
 14.  0.  0.  0.  0.  0. 15.]

Process finished with exit code 0
```

Task-8-2:

```
import numpy as np
a1=input("Enter The Array(separated by \' \'):").split() #Example a1= 1 2 3 4 5
a1=np.array(list(map(int,a1)))
a2=input("Enter The Array(separated by \' \'):").split() #Example a2= 1 2 3 4 5
a2=np.array(list(map(int,a2)))
cmp= (a1 == a2).all()
print(cmp)
```

```
Task-8-2
C:\Users\Home\PycharmProjects\PycharmProject\venv\Scripts\python.exe C:/Users/Home/
Enter The Array(separated by ' '):11 12 13 14 15
Enter The Array(separated by ' '):11 12 13 14 16
False

Process finished with exit code 0
```

Task-8-3:

```
import numpy as np
print(0 * np.nan)
print(np.nan != np.nan)
print(np.inf > np.nan)
print(np.nan - np.nan)
print(0.3 == 3 * 0.1)
```

```
Task-8-3
C:\Users\Home\PycharmProjects\Pychar
nan
True
False
nan
False

Process finished with exit code 0
```

Task-8-4:

```
import pandas as pd
import numpy as np
result=''
statement=input("Enter The Array (Separated By \' \'): ").split()
statement=np.array(statement)
s_statement=pd.Series(statement)
for i in range(len(statement)):
    result+=(" "+s_statement[i])
print(result.title())
```

```
for i in range(len(statement))
Task-8-4
C:\Users\Home\PycharmProjects\PycharmProject\venv\Scripts\python.exe C:/Users/H
Enter The Array (Separated By ' '): amrita school of engineering chennai campus
 Amrita School Of Engineering Chennai Campus

Process finished with exit code 0
```

Task-8-5:

```python
import numpy as np
#4.Array datatype conversion
a1=np.array([1,2,3,4,5])
print("Data Type Is \'int32\':",a1)
a1=a1.astype('float64')
print("Data Type Is \'",a1.dtype,"\':",a1)
#3.Identity Matrix
ord=int(input("Enter The Order Of The Required Identity Matrix:"))
I=np.identity(ord,dtype='int32')
print(I)
```

```
Task-8-5
C:\Users\Home\PycharmProjects\PycharmProject\venv\Scripts\python.exe C
Data Type Is 'int32': [1 2 3 4 5]
Data Type Is ' float64 ': [1. 2. 3. 4. 5.]
Enter The Order Of The Required Identity Matrix:5
[[1 0 0 0 0]
 [0 1 0 0 0]
 [0 0 1 0 0]
 [0 0 0 1 0]
 [0 0 0 0 1]]

Process finished with exit code 0
```