

```
In [7]: import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
import math
from scipy.stats import poisson
```

```
In [4]: def calc_poisson(k,mu):
return ((mu**k)*(math.exp(-1*mu)))/math.factorial(k)
```

```
In [6]: calc_poisson(k=5,mu=3)
```

```
Out[6]: 0.10081881344492448
```

```
In [13]: calc_poisson(k=0,mu=3)+calc_poisson(k=1,mu=3)
```

```
Out[13]: 0.19914827347145578
```

```
In [14]: poisson.pmf(k=0,mu=3)*poisson.pmf(k=1,mu=3)
```

```
Out[14]: 0.1991482734714558
```

```
In [15]: poisson.cdf(k=1,mu=3)
```

```
Out[15]: 0.1991482734714558
```

```
In [9]: poisson.pmf(k=5,mu=3)
```

```
Out[9]: 0.10081881344492458
```

```
In [16]: poisson.pmf(k=15,mu=18.5)
```

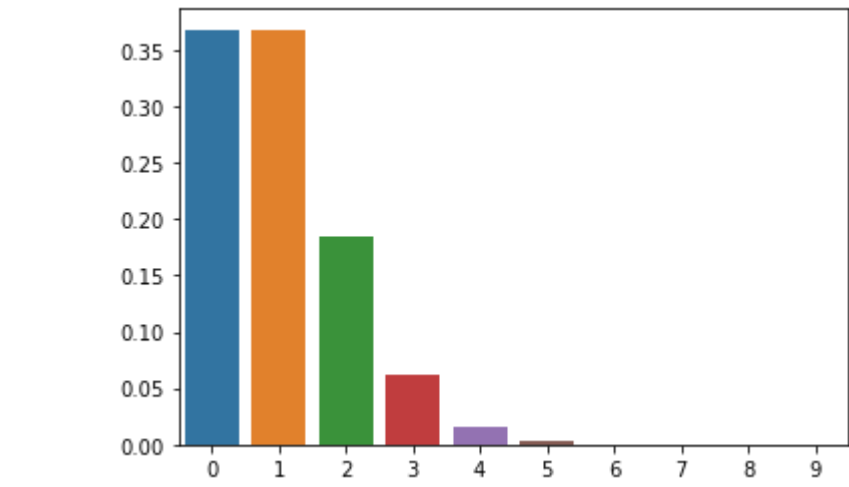
```
Out[16]: 0.07188336510431341
```

```
In [17]: 1-poission.cdf(k=6,mu=18.5)
```

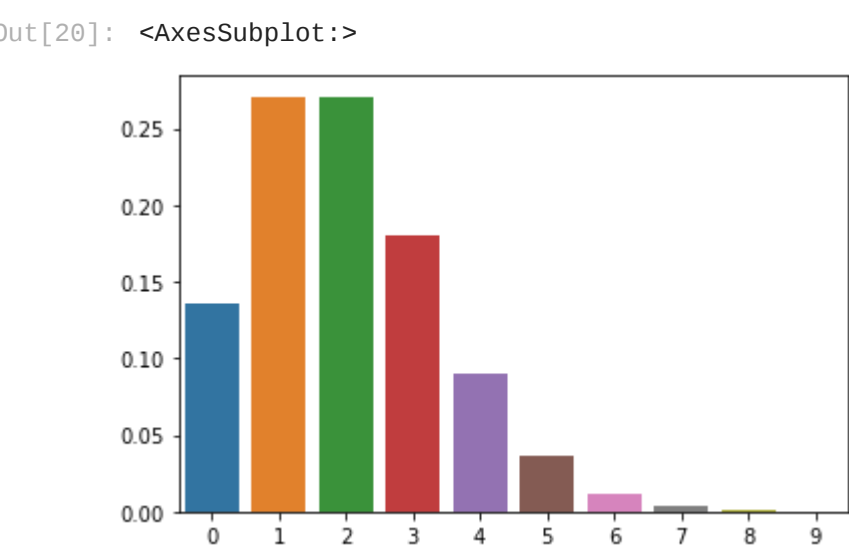
```
Out[17]: 0.9992622541111789
```

```
In [ ]:
```

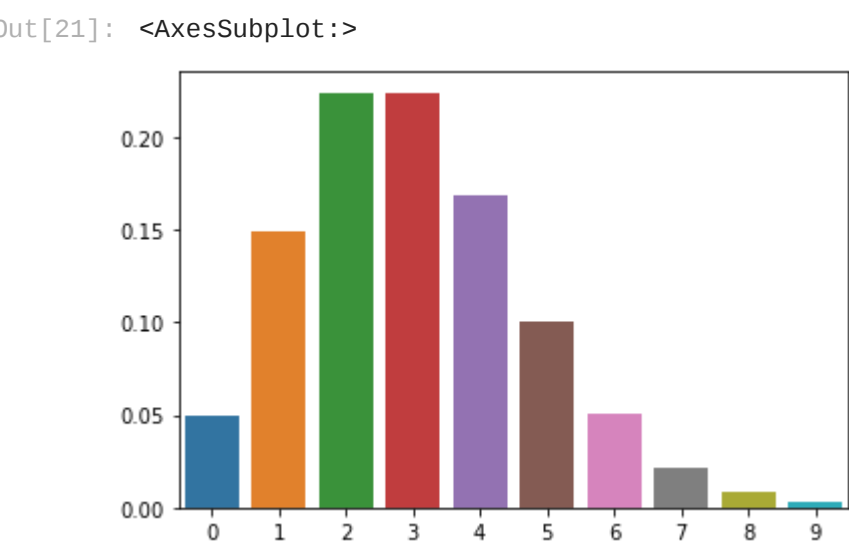
```
In [19]: mu=1
x_values =np.arange(10)
y_values=poisson.pmf(x_values,mu=mu)
sns.barplot(x=x_values,y=y_values)
```



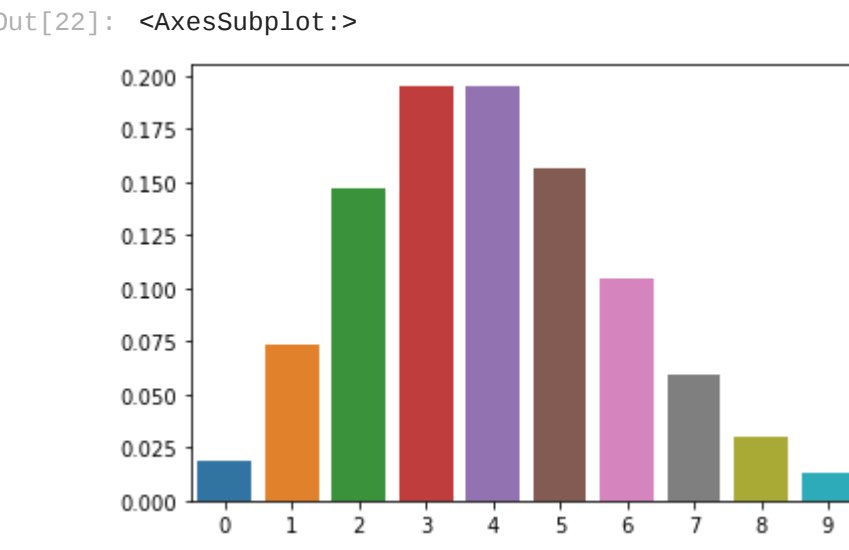
```
In [20]: mu=2
x_values =np.arange(10)
y_values=poisson.pmf(x_values,mu=mu)
sns.barplot(x=x_values,y=y_values)
```



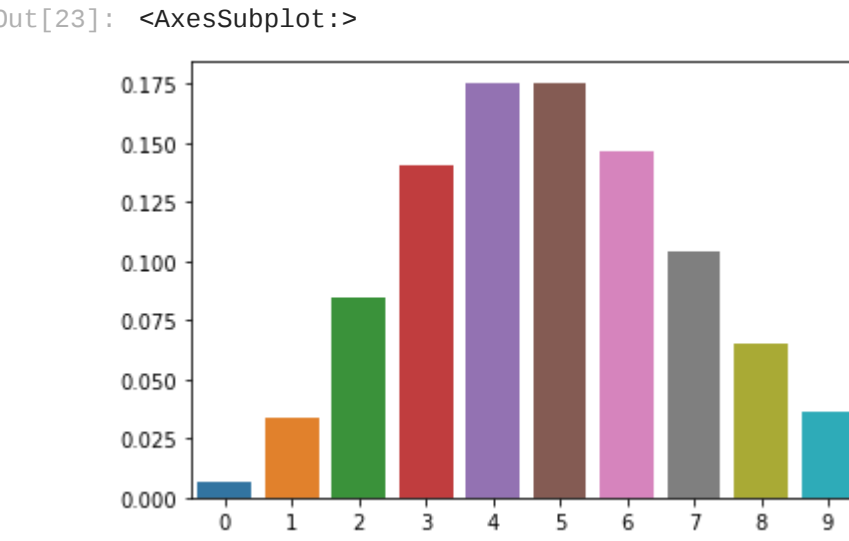
```
In [21]: mu=3
x_values =np.arange(10)
y_values=poisson.pmf(x_values,mu=mu)
sns.barplot(x=x_values,y=y_values)
```



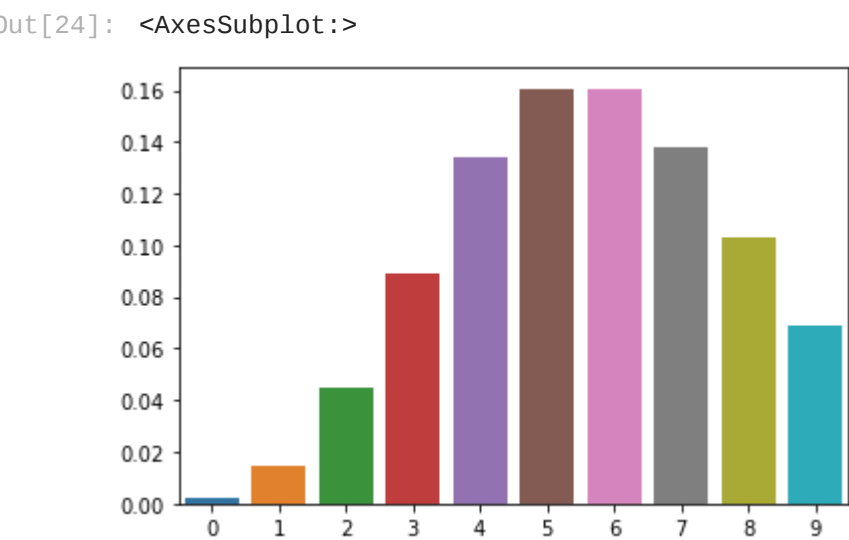
```
In [22]: mu=4
x_values =np.arange(10)
y_values=poisson.pmf(x_values,mu=mu)
sns.barplot(x=x_values,y=y_values)
```



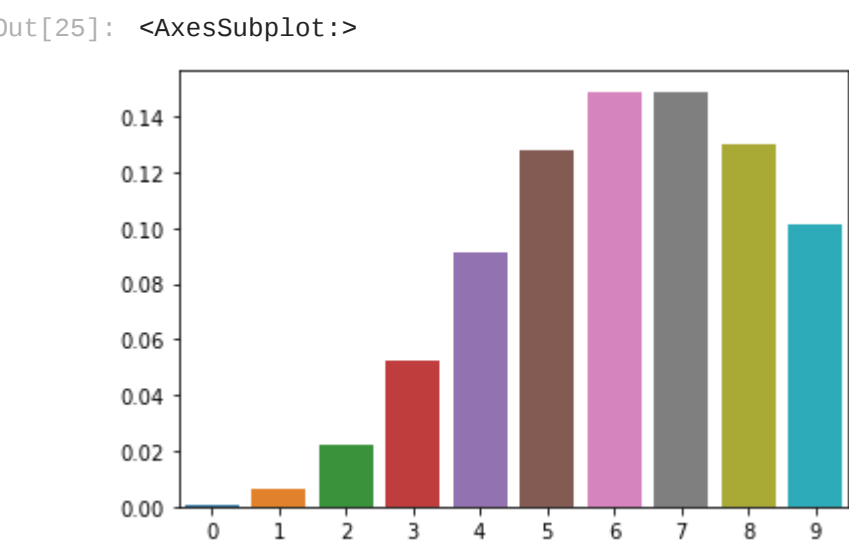
```
In [23]: mu=5
x_values =np.arange(10)
y_values=poisson.pmf(x_values,mu=mu)
sns.barplot(x=x_values,y=y_values)
```



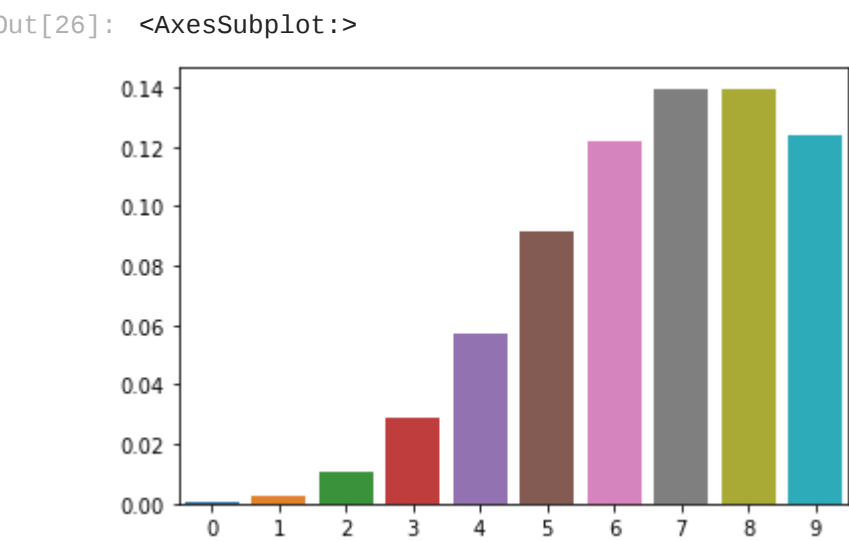
```
In [24]: mu=6
x_values =np.arange(10)
y_values=poisson.pmf(x_values,mu=mu)
sns.barplot(x=x_values,y=y_values)
```



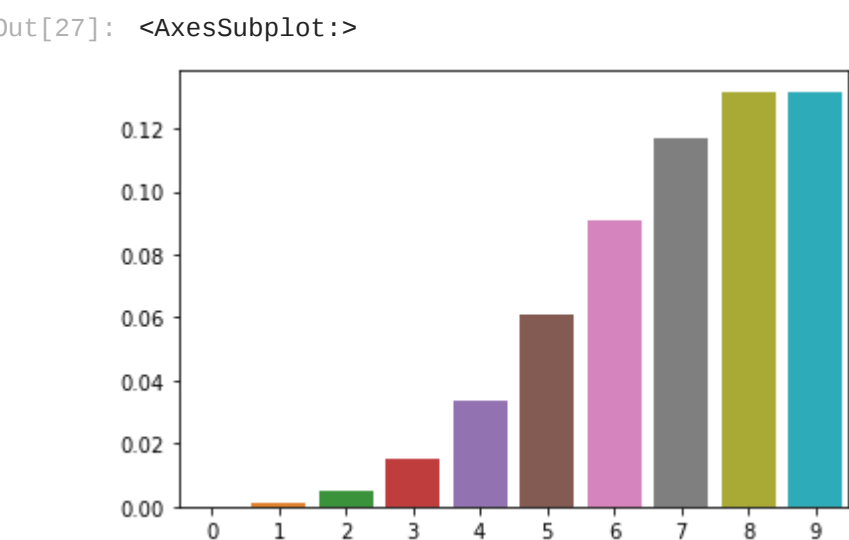
```
In [25]: mu=7
x_values =np.arange(10)
y_values=poisson.pmf(x_values,mu=mu)
sns.barplot(x=x_values,y=y_values)
```



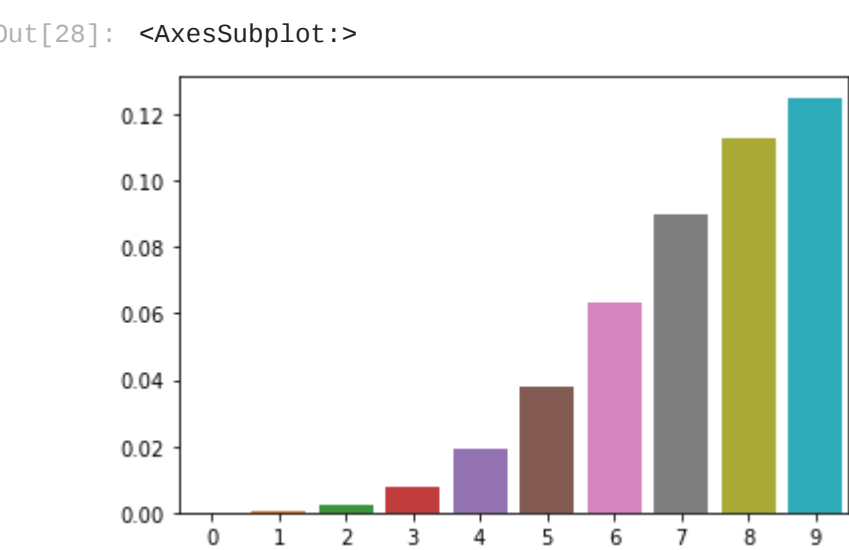
```
In [26]: mu=8
x_values =np.arange(10)
y_values=poisson.pmf(x_values,mu=mu)
sns.barplot(x=x_values,y=y_values)
```



```
In [27]: mu=9
x_values =np.arange(10)
y_values=poisson.pmf(x_values,mu=mu)
sns.barplot(x=x_values,y=y_values)
```



```
In [28]: mu=10
x_values =np.arange(10)
y_values=poisson.pmf(x_values,mu=mu)
sns.barplot(x=x_values,y=y_values)
```



```
In [29]: poisson.pmf(k=1,mu=2)
```

```
Out[29]: 0.2706705664732254
```

```
In [30]: poisson.pmf(k=0,mu=1)
```

```
Out[30]: 0.36787944117144233
```

```
In [31]: poisson.pmf(k=3,mu=4/3)
```

```
Out[31]: 0.10413714098399081
```

```
In [32]: poisson.pmf(k=3,mu=1.33)
```

```
Out[32]: 0.10370316509877235
```

```
In [34]: sigma_y=73/(.7*5)
sigma_y
```

```
Out[34]: 20.857142857142858
```

```
In [35]: sigma_y**2
```

```
Out[35]: 435.0204081632653
```

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In [ ]:
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In [ ]:
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In [ ]:
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