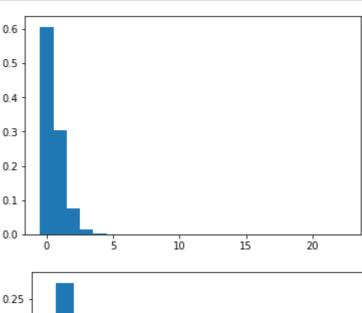
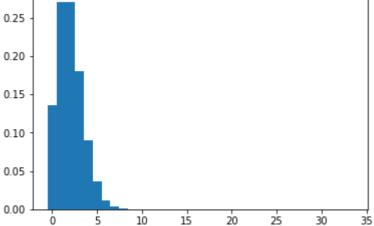
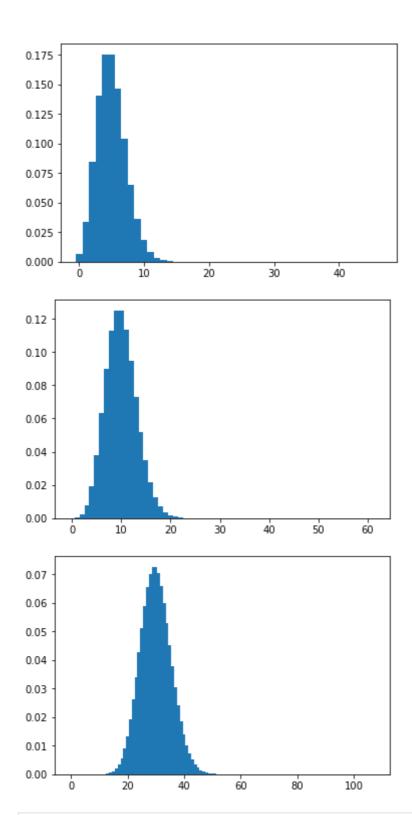
```
In [2]:
import math
import matplotlib.pyplot as plt
import numpy as np
def poisson(rate):
    x = 0
    pmf = []
    prob = 1
    #goes till smallest positive number possible
        prob = math.exp(-rate) * pow(rate, x) / math.factorial(x)
       pmf.append(prob)
       x = x + 1
    n = np.arange(0,x)
    plt.bar(n,pmf,width = 1)
    plt.show()
#observe change in the shape of distribution as lamda increases
poisson(0.5)
poisson(2)
poisson(5)
poisson(10)
poisson(30)
```







In []: