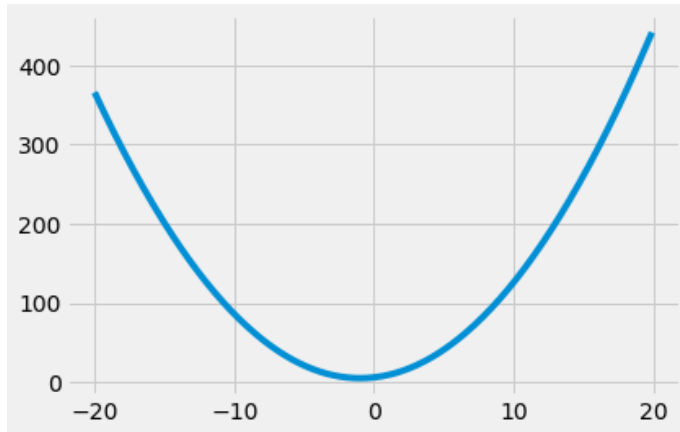


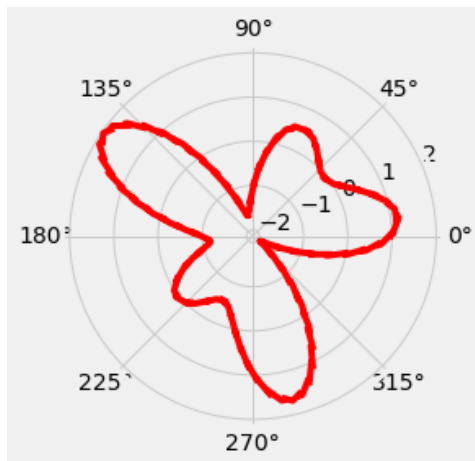
```
In [3]: import matplotlib.pyplot as plt
import numpy as np
import scipy.stats as sps
from mpl_toolkits.mplot3d import Axes3D

plt.style.use('fivethirtyeight')

x = np.arange(-20,20,0.1)
plt.plot(x,x*x+2*x+6)
plt.show()
```



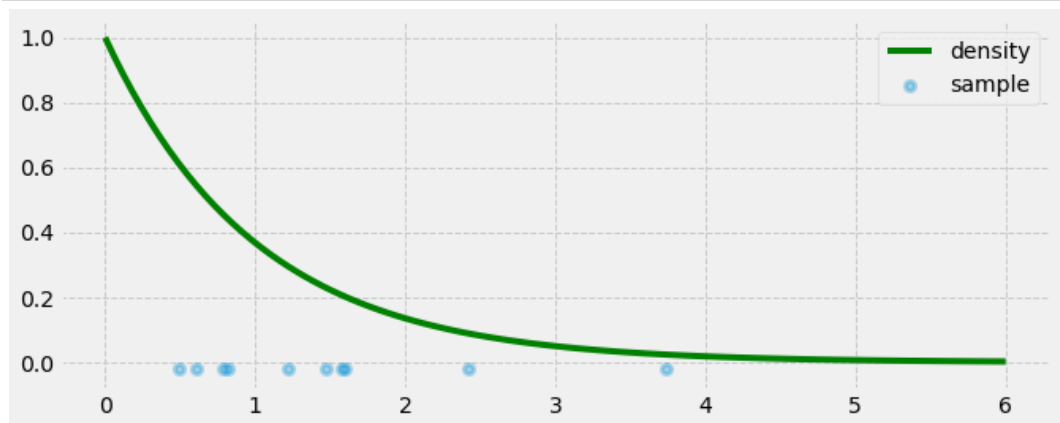
```
In [4]: t = np.linspace(0, 4 * np.pi, 100)
plt.figure()
#plt.grid(color='g', linestyle='--', linewidth='0.5')
plt.polar(t, np.sin(3*t)+np.cos(5*t), 'r--')
plt.show()
```



```
In [5]: sample = sps.expon.rvs(size=10)

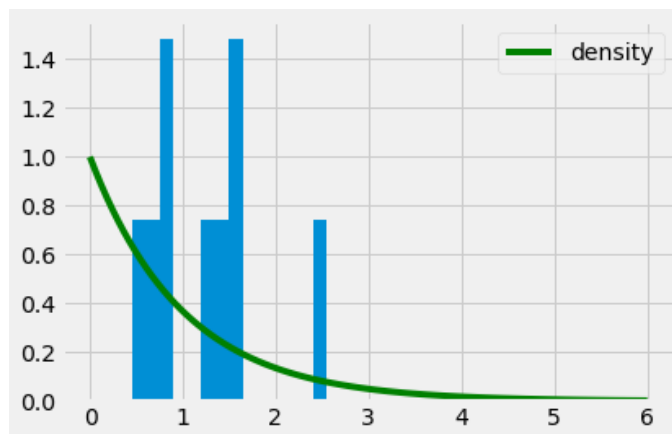
plt.figure(figsize=(10, 4))
plt.grid(ls='--')
plt.scatter(sample, np.zeros(10) - 0.02, alpha=0.3, label='sample', linewidth=3)

grid = np.linspace(0, 6, 100)
plt.plot(grid, sps.expon.pdf(grid), color='green', label='density', linewidth=4)
plt.legend()
plt.show()
```



```
In [6]: plt.figure()
n, bins, patches = plt.hist(sample, range=(0, 3), bins=20, normed=True)
plt.plot(grid, sps.expon.pdf(grid), color='green', label='density')
plt.legend()
plt.show()
```

/usr/local/lib/python3.5/dist-packages/matplotlib/axes/\_axes.py:6448: Use  
rWarning: The 'normed' kwarg is deprecated, and has been replaced by the  
'density' kwarg.  
warnings.warn("The 'normed' kwarg is deprecated, and has been "

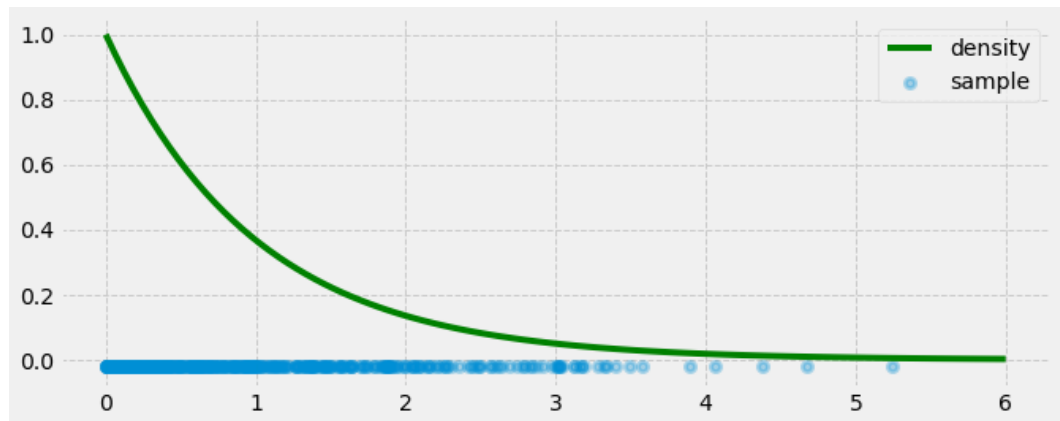


```
In [7]: sample = sps.expon.rvs(size=500)

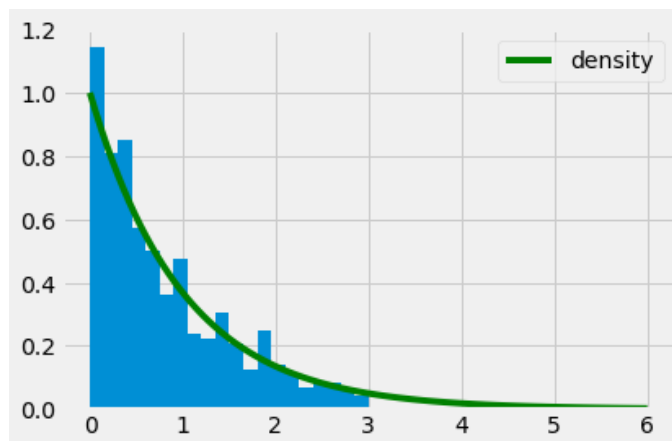
plt.figure(figsize=(10, 4))
plt.grid(ls='--')
plt.scatter(sample, np.zeros(500) - 0.02, alpha=0.3, label='sample', line
widths=3)

grid = np.linspace(0, 6, 100)
plt.plot(grid, sps.expon.pdf(grid), color='green', label='density', line
width=4)
plt.legend()
plt.show()

plt.figure()
n, bins, patches = plt.hist(sample, range=(0, 3), bins=20, normed=True)
plt.plot(grid, sps.expon.pdf(grid), color='green', label='density')
plt.legend()
plt.show()
```



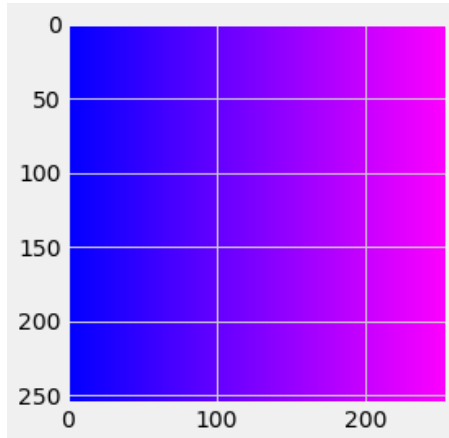
/usr/local/lib/python3.5/dist-packages/matplotlib/axes/\_axes.py:6448: Use  
rWarning: The 'normed' kwarg is deprecated, and has been replaced by the  
'density' kwarg.  
warnings.warn("The 'normed' kwarg is deprecated, and has been "



```
In [8]: n = 256
u = np.linspace(0, 1, n)
x, y = np.meshgrid(u, u)
z = np.zeros((n, n, 3))
z[:, :, 0] = x
z[:, :, 2] = np.exp(x)

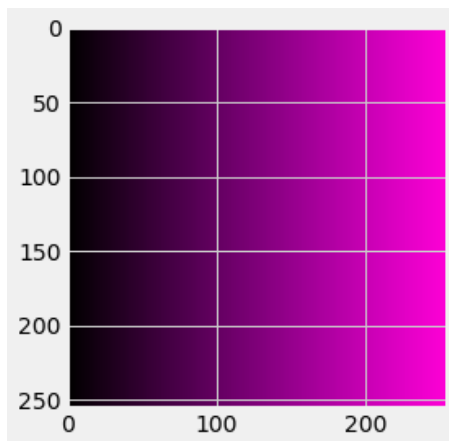
plt.figure()
plt.imshow(z)
plt.show()
```

Clipping input data to the valid range for imshow with RGB data ([0..1] f or floats or [0..255] for integers).



```
In [9]: n = 256
u = np.linspace(0, 1, n)
x, y = np.meshgrid(u, u)
z = np.zeros((n, n, 3))
z[:, :, 0] = x
z[:, :, 2] = np.sin(x)

plt.figure()
plt.imshow(z)
plt.show()
```



```
In [10]: t = np.linspace(0, 2 * np.pi, 50)
r = 0.5
th, ph = np.meshgrid(t, t)
x, y, z = (1 + r * np.cos(ph)) * np.cos(th), (1 + r * np.cos(ph)) * np.s
in(th), r * np.sin(ph)
fig = plt.figure()
ax = Axes3D(fig)
ax.elev = 50
ax.set_aspect(0.3)
ax.plot_surface(x, y, z, rstride=2, cstride=1, cmap='gnuplot')
plt.show()
```

