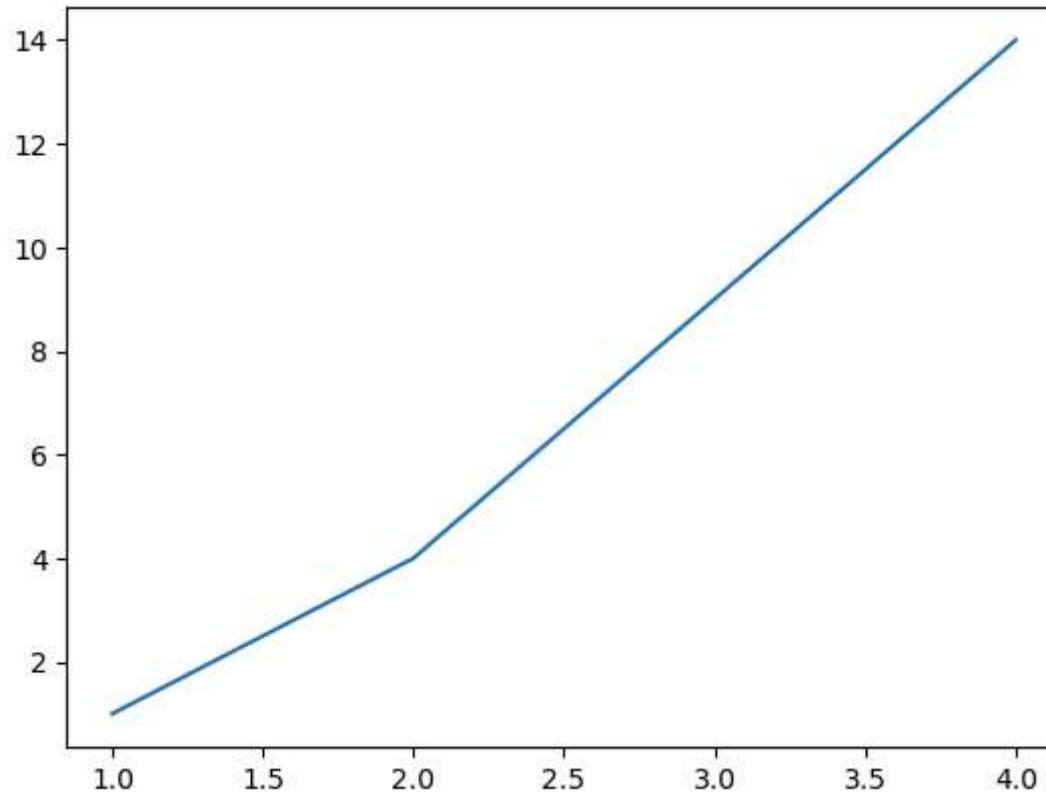


```
In [1]: #MatplotlibLib
import matplotlib.pyplot as plt #Import the pyplot from matplotlib
#Data to plotted
x = [1,2,3,4]
y = [1,4,9,14]

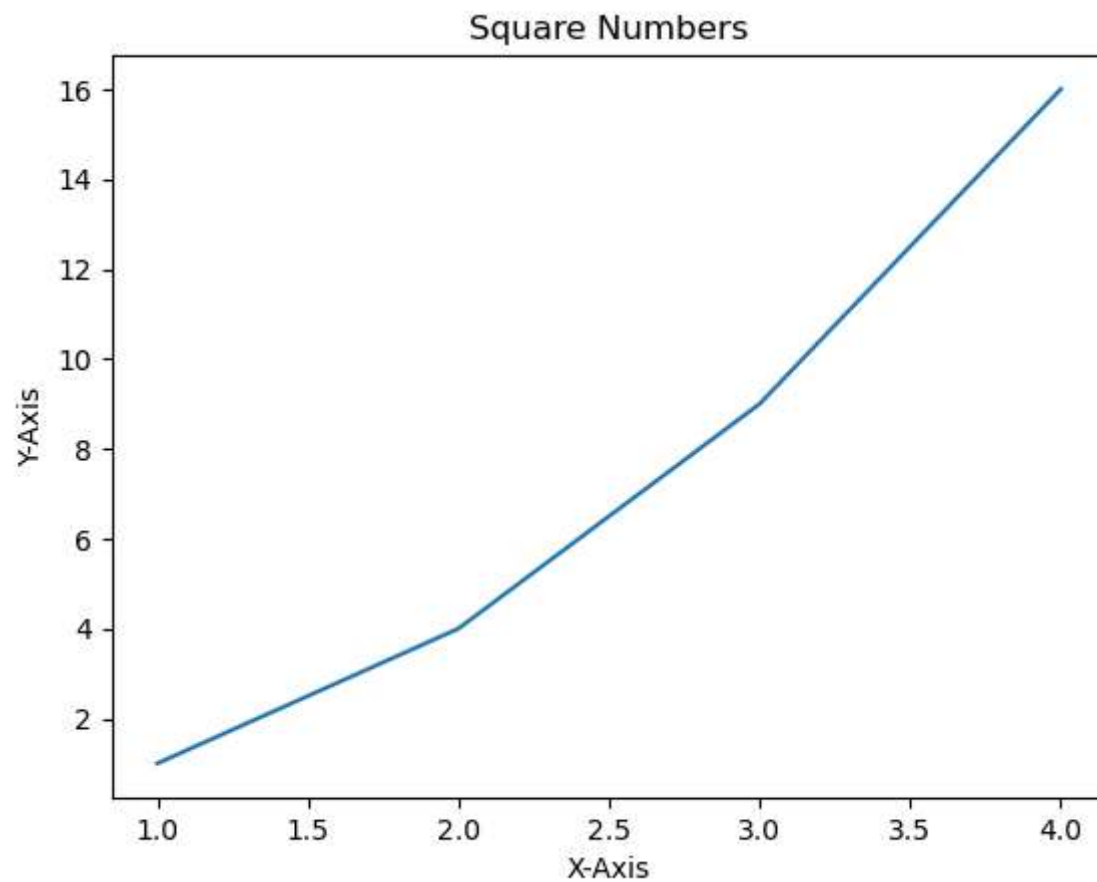
plt.plot(x,y) #plot function to draw a line
plt.show() #show() display the graph
```



```
In [2]: import matplotlib.pyplot as plt
#Data to plotted
x = [1,2,3,4]
y = [1,4,9,16]

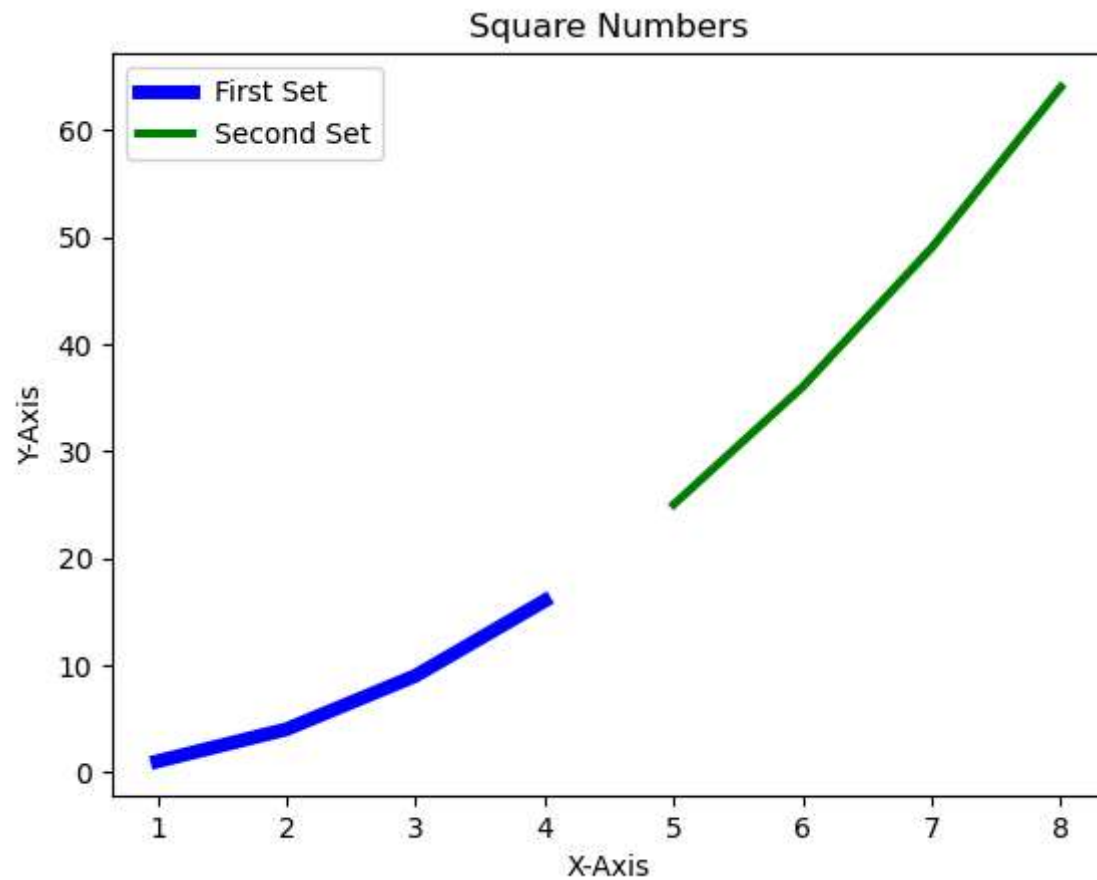
plt.title("Square Numbers")
plt.xlabel("X-Axis")
plt.ylabel("Y-Axis")
```

```
plt.plot(x,y) #plot function to draw a line  
plt.show()
```



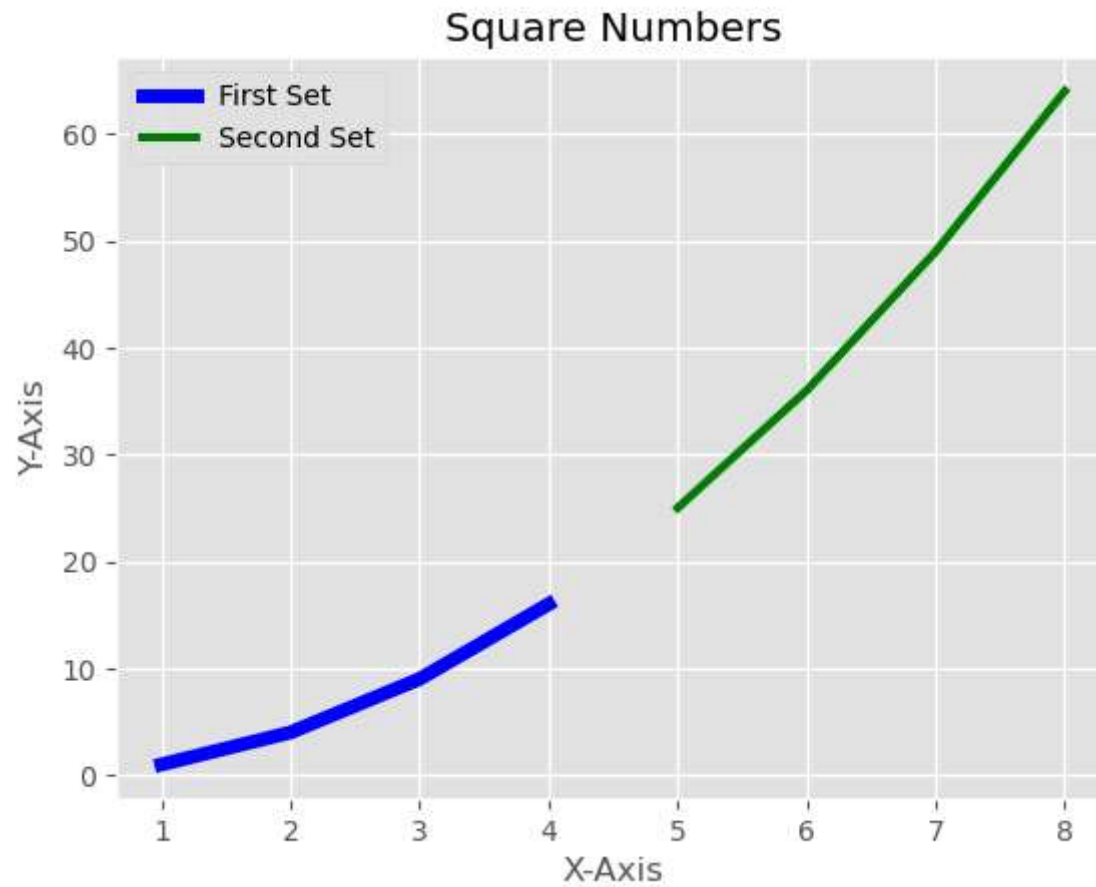
```
In [5]: import matplotlib.pyplot as plt  
  
x = [1,2,3,4]  
y = [1,4,9,16]  
  
x1 = [5,6,7,8]  
y1 = [25,36,49,64]  
plt.title("Square Numbers")  
plt.xlabel("X-Axis")  
plt.ylabel("Y-Axis")  
plt.plot(x,y,linewidth=5,label="First Set",color='b')  
plt.plot(x1,y1,linewidth=3,label="Second Set",color='g')
```

```
plt.legend()  
plt.show()
```



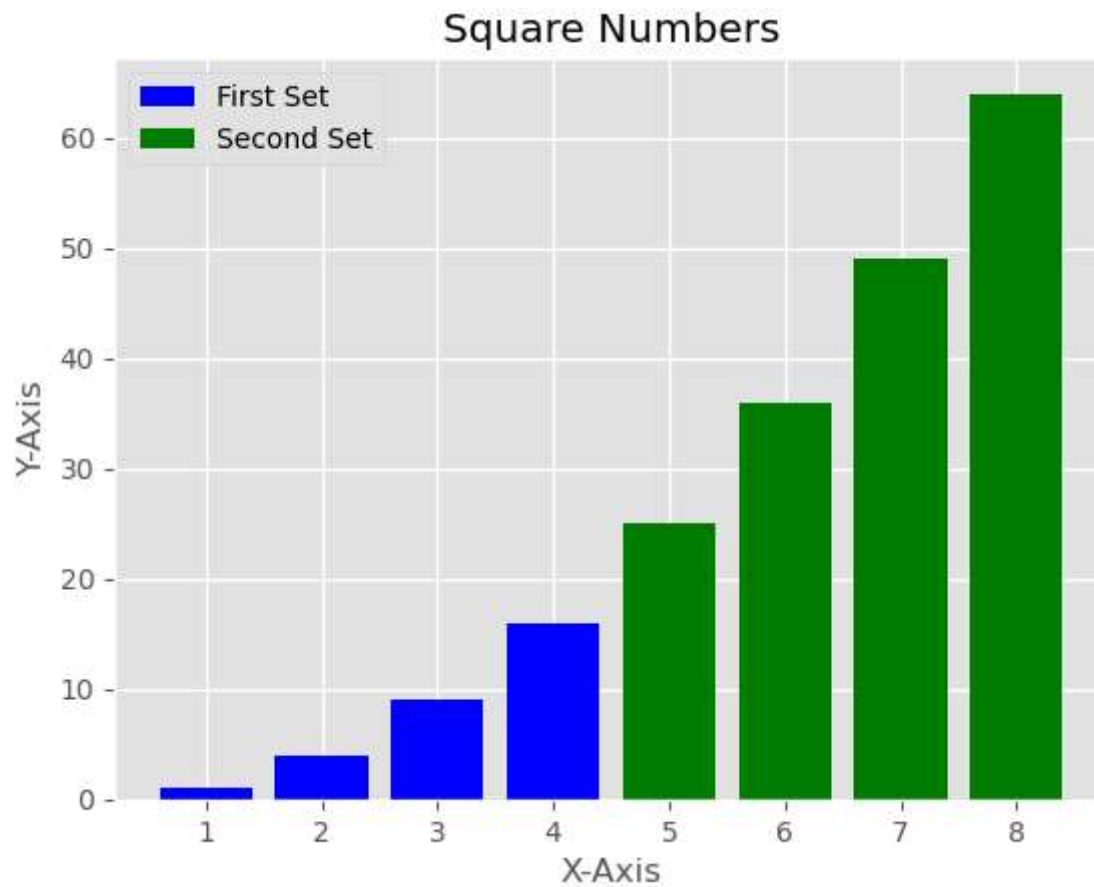
```
In [6]: import matplotlib.pyplot as plt  
import matplotlib.style as stl #for styling  
stl.use('ggplot')  
  
x = [1,2,3,4]  
y = [1,4,9,16]  
  
x1 = [5,6,7,8]  
y1 = [25,36,49,64]  
plt.title("Square Numbers")  
plt.xlabel("X-Axis")  
plt.ylabel("Y-Axis")  
plt.plot(x,y,linewidth=5,label="First Set",color='b')
```

```
plt.plot(x1,y1,linewidth=3,label="Second Set",color='g')  
plt.legend()  
plt.show()
```



```
In [7]: import matplotlib.pyplot as plt  
import matplotlib.style as stl #for styling  
stl.use('ggplot')  
  
x = [1,2,3,4]  
y = [1,4,9,16]  
  
x1 = [5,6,7,8]  
y1 = [25,36,49,64]  
plt.title("Square Numbers")  
plt.xlabel("X-Axis")  
plt.ylabel("Y-Axis")
```

```
plt.bar(x,y,linewidth=5,label="First Set",color='b')  
plt.bar(x1,y1,linewidth=3,label="Second Set",color='g')  
plt.legend()  
plt.show()
```

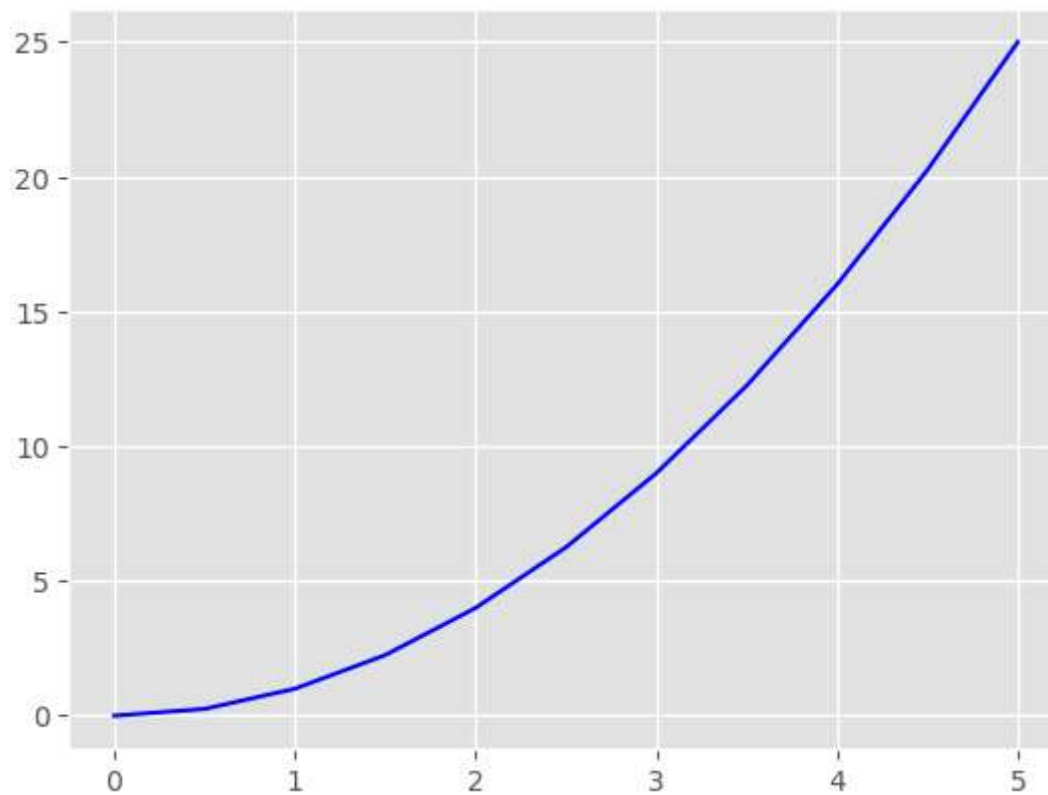


```
In [8]: import numpy as np  
x = np.linspace(0,5,11)  
print(x)  
y = x ** 2  
y
```

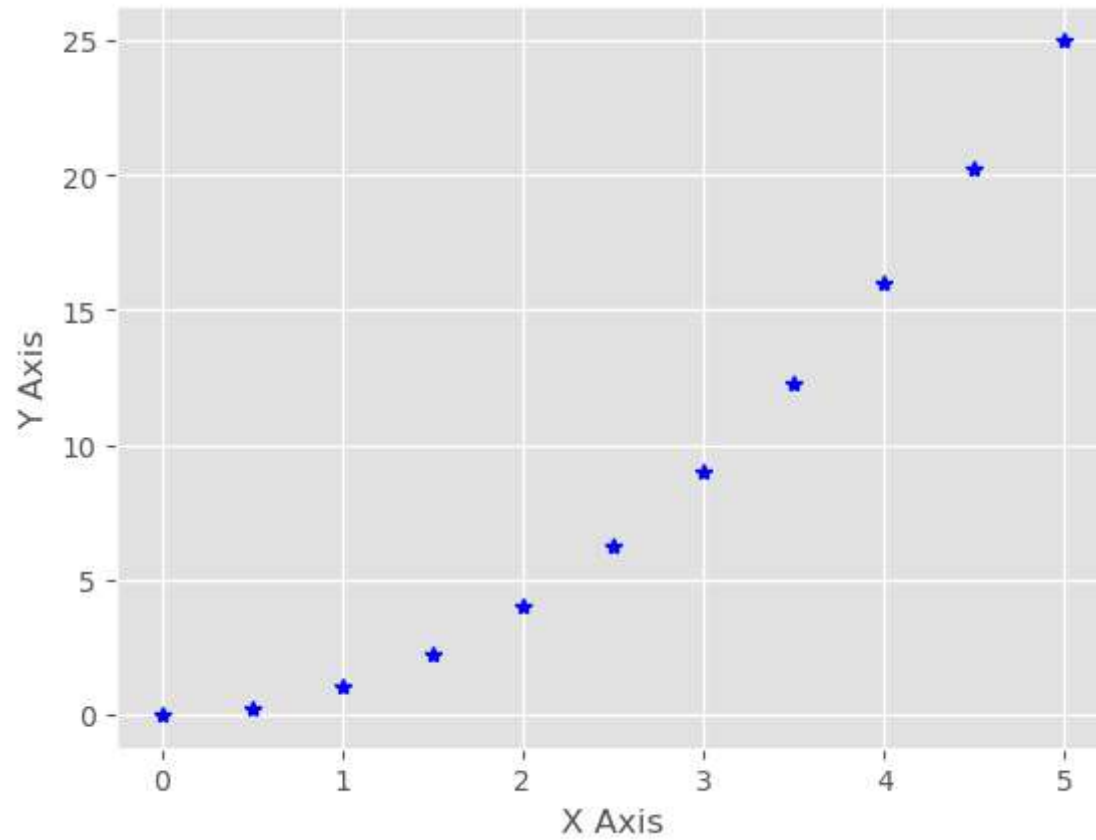
```
[0.  0.5  1.  1.5  2.  2.5  3.  3.5  4.  4.5  5. ]
```

```
Out[8]: array([ 0. ,  0.25,  1. ,  2.25,  4. ,  6.25,  9. , 12.25, 16. ,  
                20.25, 25.  ])
```

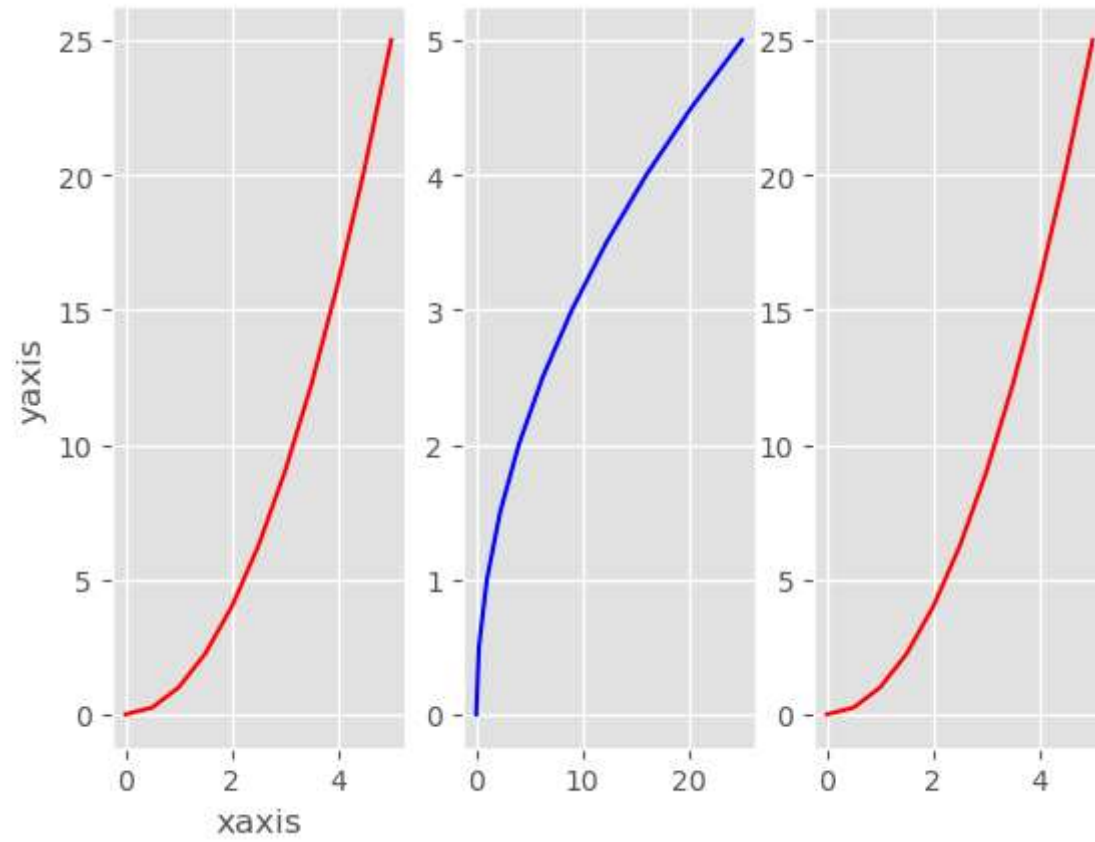
```
In [9]: import matplotlib.pyplot as plt  
plt.plot(x,y,color='b')  
plt.show()
```



```
In [10]: plt.xlabel("X Axis")  
plt.ylabel("Y Axis")  
plt.plot(x,y,'b*')  
plt.show()
```

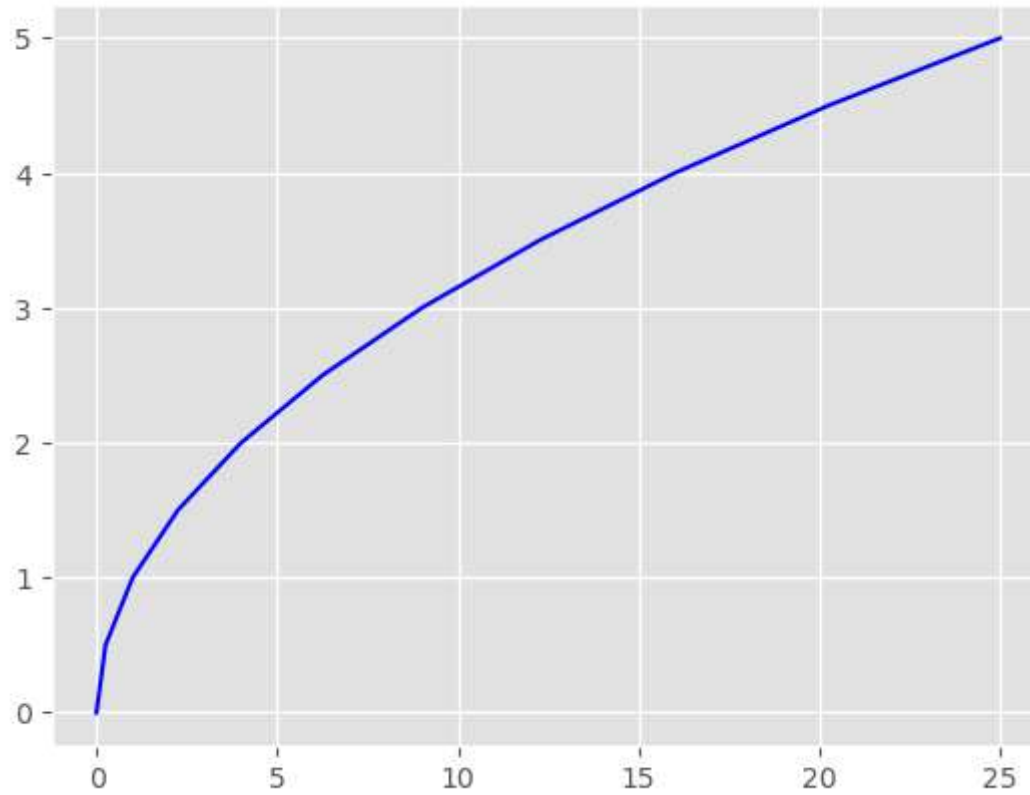


```
In [11]: plt.subplot(1,3,1)
plt.xlabel("xaxis")
plt.plot(x,y,'r')
plt.ylabel("yaxis")
plt.subplot(1,3,3)
plt.plot(x,y,'r')
plt.subplot(1,3,2)
plt.plot(y,x,'b')
plt.show()
```

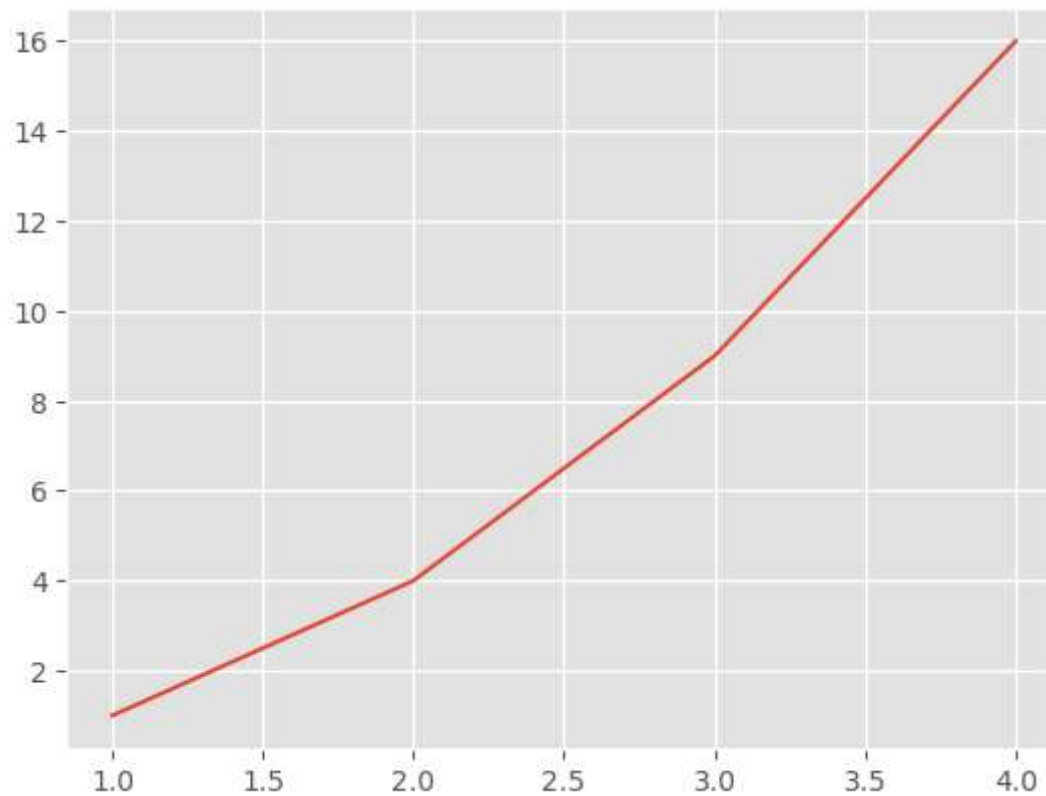


```
In [12]: plt.plot(y,x,'b')  
plt.show()
```

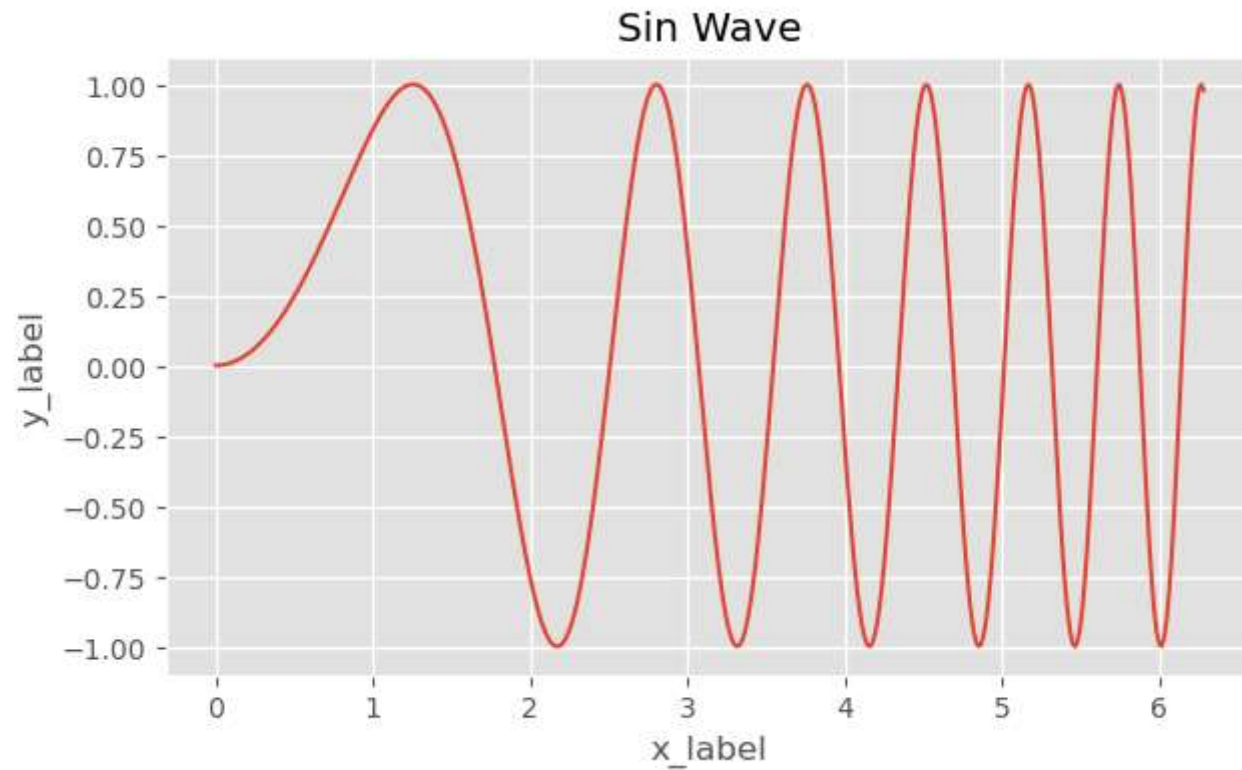




```
In [13]: #Object Orientation
#Axes
import matplotlib.pyplot as plt
#Create a Figure instance
fig=plt.figure()
#Create an Axes object using subplots()
axes=fig.subplots()
#Plot the data
axes.plot([1,2,3,4],[1,4,9,16])
plt.show()
```

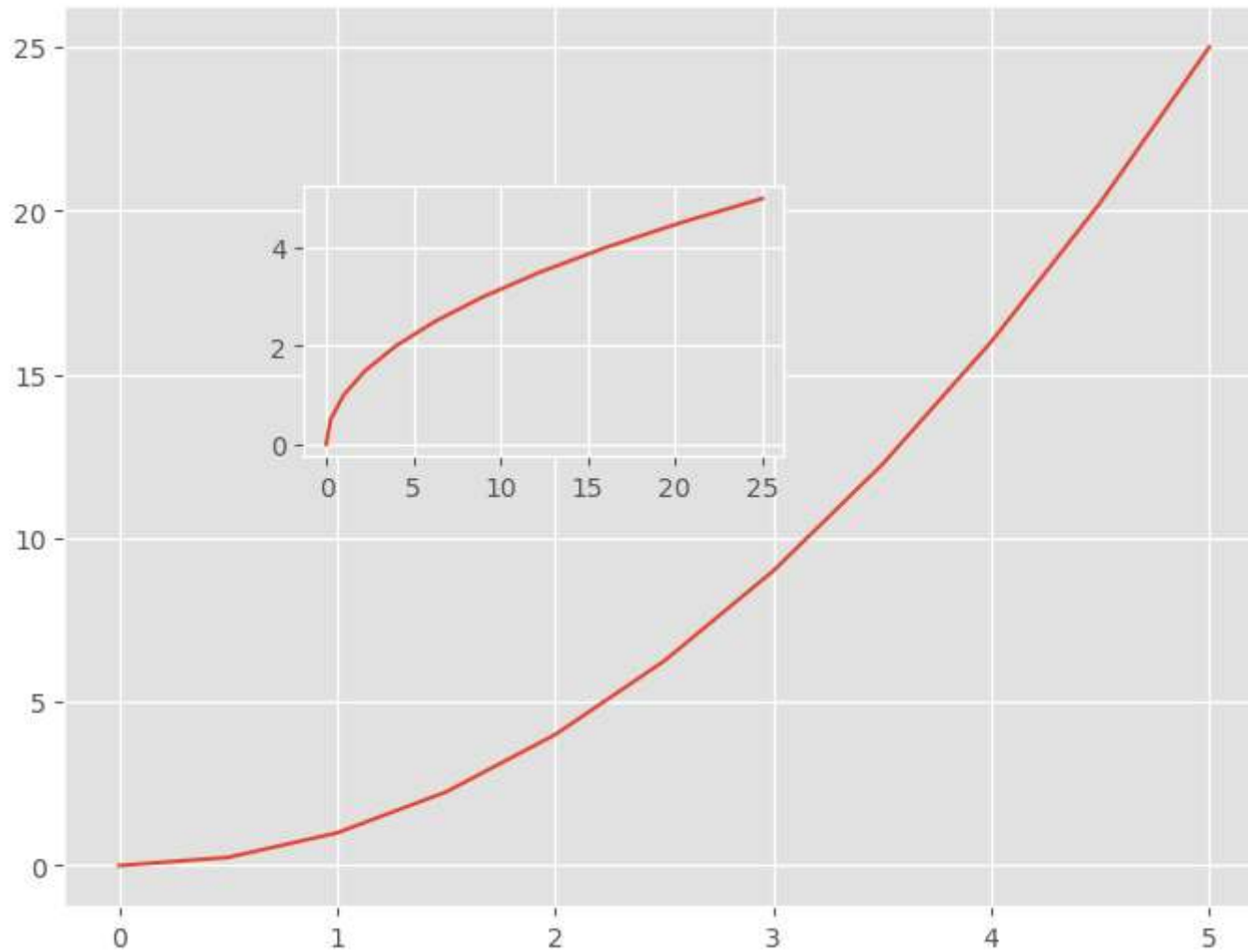


```
In [15]: x=np.linspace(0,2*np.pi,400)
y=np.sin(x**2)
#fig=plt.figure()
fig,ax=plt.subplots(figsize=(7,4)) #width,height
ax.plot(x,y)
ax.set_title("Sin Wave")
ax.set_xlabel("x_label")
ax.set_ylabel("y_label")
plt.show()
```

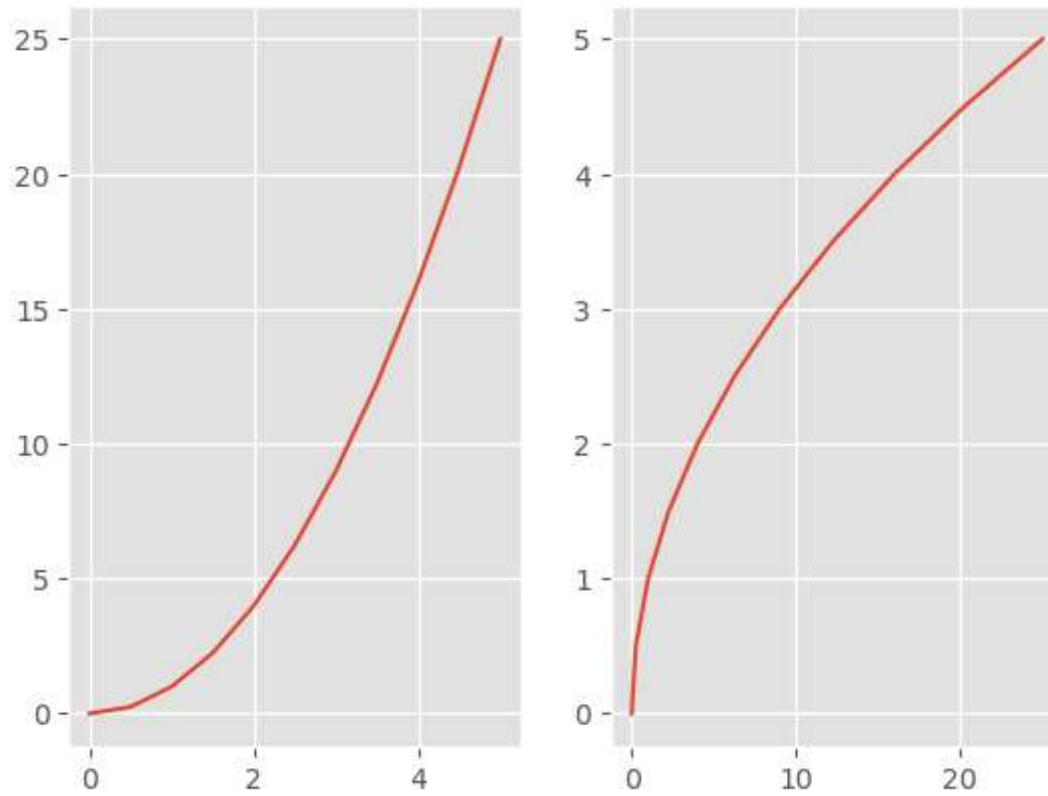


```
In [17]: x = np.linspace(0,5,11)
print(x)
y = x ** 2
y
fig = plt.figure()
axes1 = fig.add_axes([0,0,1,1]) #Axes object represents an individual subplot within a figure
axes2 = fig.add_axes([0.2,0.5,0.4,0.3])
axes1.plot(x,y)
axes2.plot(y,x)
axes.set_title('Demo graph using oo')
```

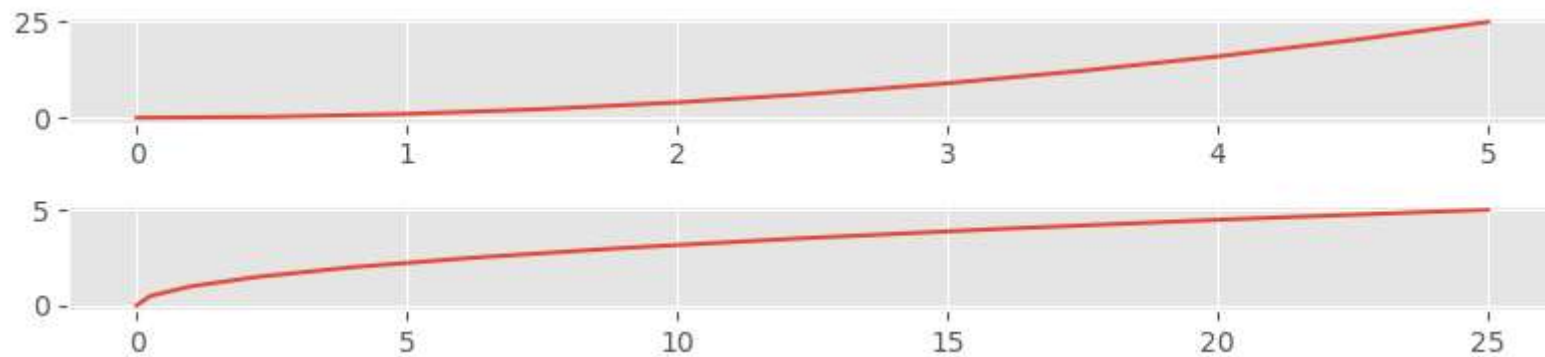
```
[0.  0.5 1.  1.5 2.  2.5 3.  3.5 4.  4.5 5. ]
Out[17]: Text(0.5, 1.0, 'Demo graph using oo')
```



```
In [18]: x = np.linspace(0,5,11)
y = x ** 2
fig, axes = plt.subplots(nrows=1, ncols=2)
axes[0].plot(x,y)
axes[1].plot(y,x)
plt.show()
```



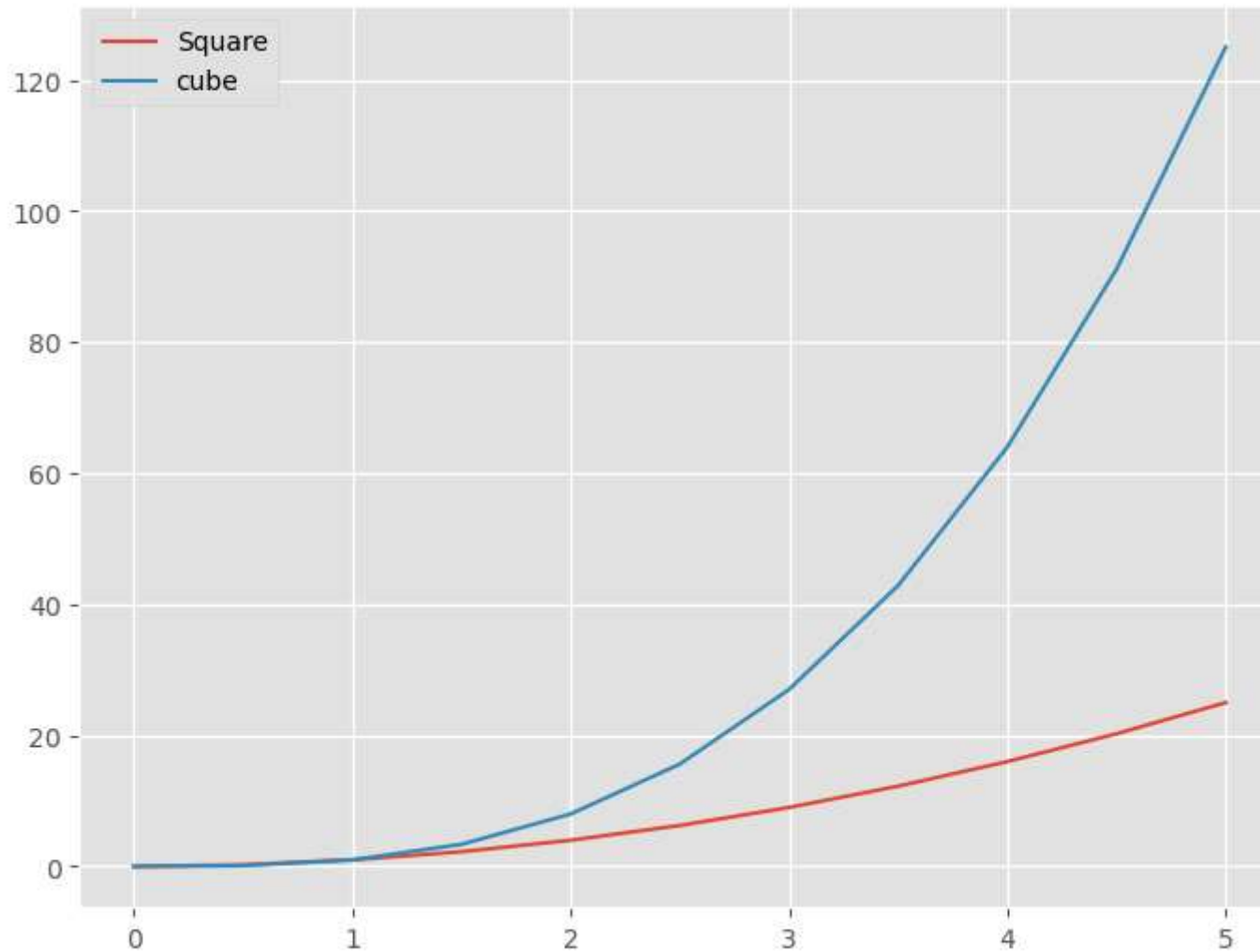
```
In [19]: fig, axes = plt.subplots(nrows=2, ncols=1, figsize=(8,2))
axes[0].plot(x,y)
axes[1].plot(y,x)
plt.tight_layout()
```



```
In [21]: fig.savefig("D:\\bizschoolpython\\mygrap.jpeg",dpi=1000) #dots per inch and it determines the resolution of the output image
```

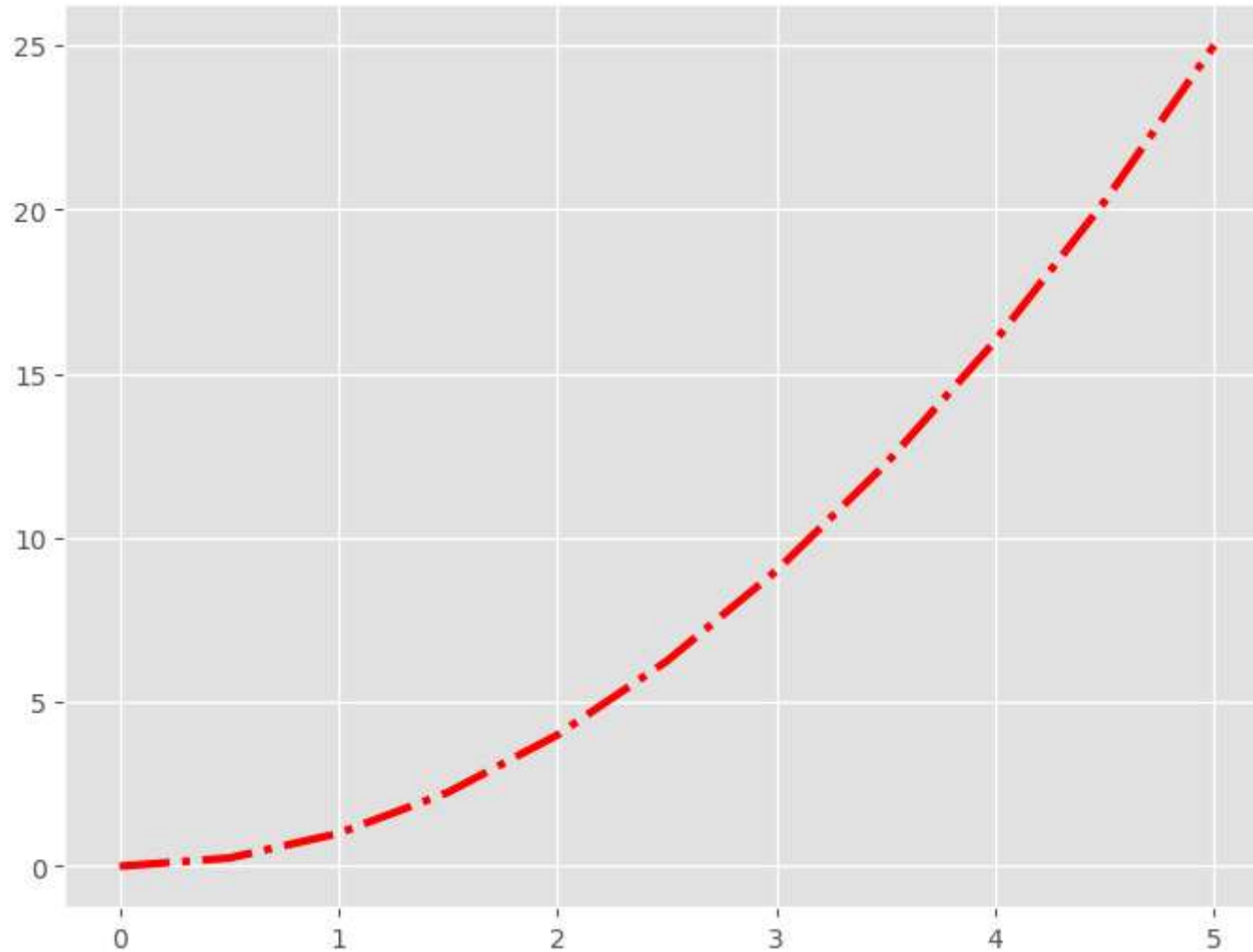
```
In [34]: fig = plt.figure()  
axes = fig.add_axes([0,0,1,1])  
axes.plot(x, x**2,label="Square")  
axes.plot(x,x**3, label="cube")  
axes.legend(loc=0)
```

Out[34]: <matplotlib.legend.Legend at 0x2b62f7b46d0>



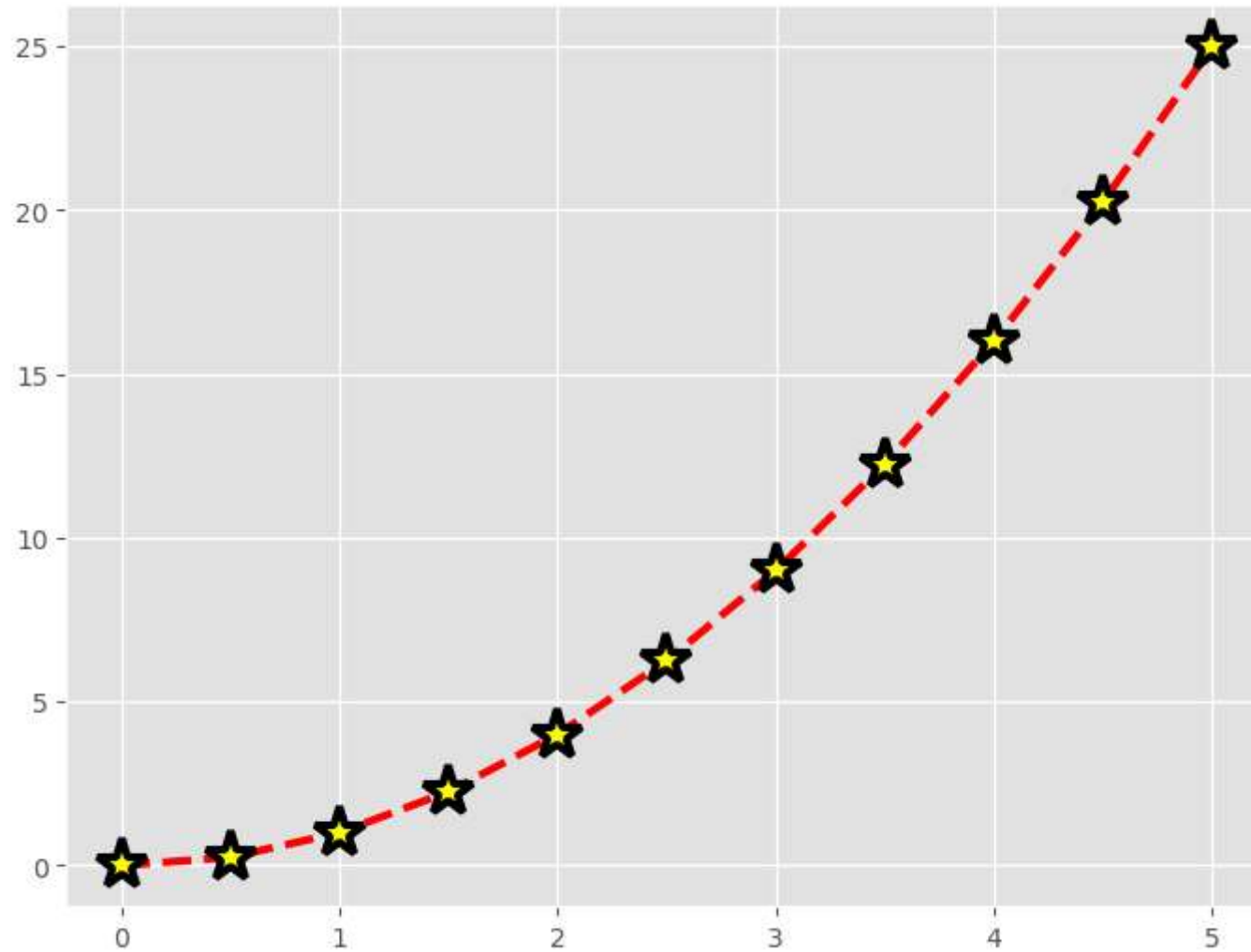
```
In [37]: fig = plt.figure()
axes = fig.add_axes([0,0,1,1])
axes.plot(x,y, color='red', lw=3,linestyle='-.')
```

```
Out[37]: [<matplotlib.lines.Line2D at 0x2b630723250>]
```



```
In [40]: fig = plt.figure()
axes = fig.add_axes([0,0,1,1])
axes.plot(x,y, color='red', lw=3,linestyle='--', marker='*', markersize="20", markerfacecolor="yellow",
          markeredgewidth=3, markeredgewidth=3, markeredgewidth=3, markeredgewidth=3, markeredgewidth=3, markeredgewidth=3,
          # check with marker +, *, &:
```

Out[40]: [



In [ ]: