```
In [1]: import matplotlib.pyplot as plt
```

```
In [2]: %matplotlib inline
```

```
In [3]: import numpy as np
```

```
In [4]: x = np.linspace(0,1,11)
        y = x ** 2
```
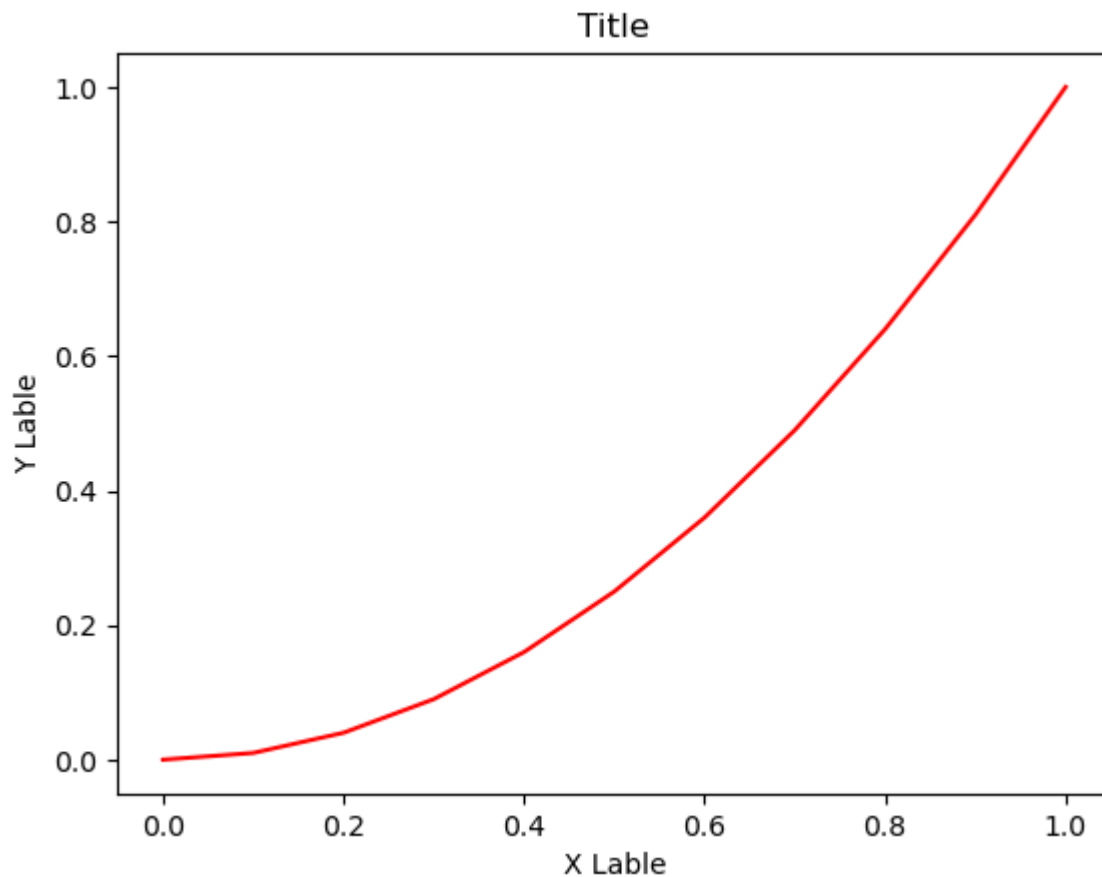
```
In [5]: x
```

```
Out[5]: array([0. , 0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, 1. ])
```

```
In [6]: y
```

```
Out[6]: array([0.  , 0.01, 0.04, 0.09, 0.16, 0.25, 0.36, 0.49, 0.64, 0.81, 1.  ])
```

```
In [7]: plt.plot(x,y, 'r-')
        plt.xlabel('X Lable')
        plt.ylabel('Y Lable')
        plt.title('Title')
```
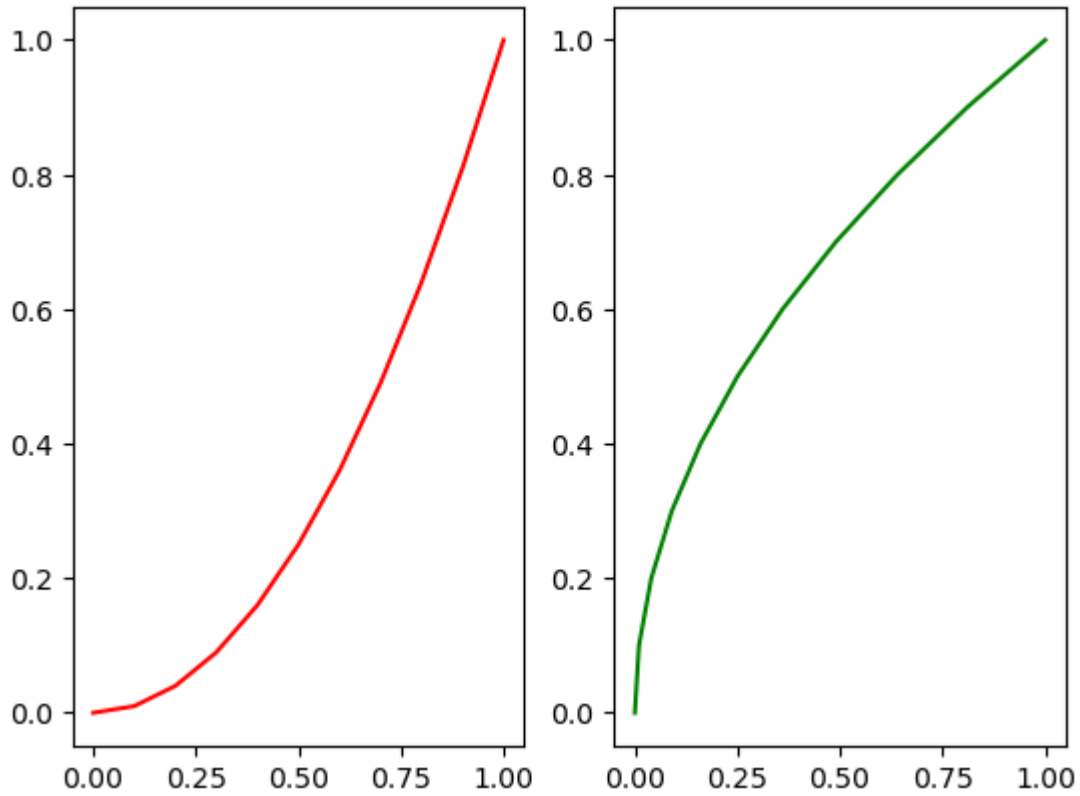
```
Out[7]: Text(0.5, 1.0, 'Title')
```
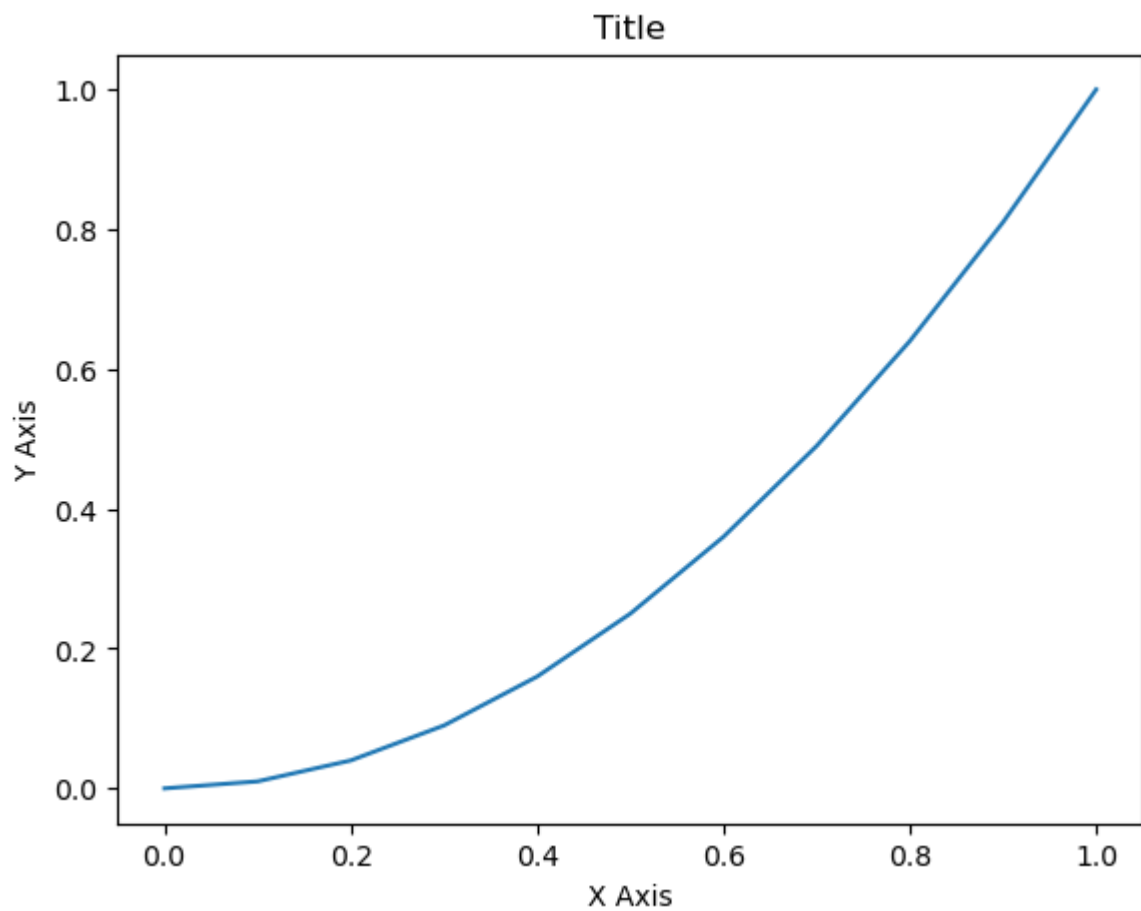


```
In [8]: plt.subplot(1,2,1)
```

```
plt.plot(x,y, 'r')

plt.subplot(1,2,2)
plt.plot(y,x, 'g')
```

[<matplotlib.lines.Line2D at 0x1d73c4a6bc0>]

In [9]:
```
fig = plt.figure()
axes = fig.add_axes([0.1, 0.1, 0.8, 0.8])
axes.plot(x,y)
axes.set_xlabel('X Axis')
axes.set_ylabel('Y Axis')
axes.set_title('Title')
```

Out[9]: Text(0.5, 1.0, 'Title')

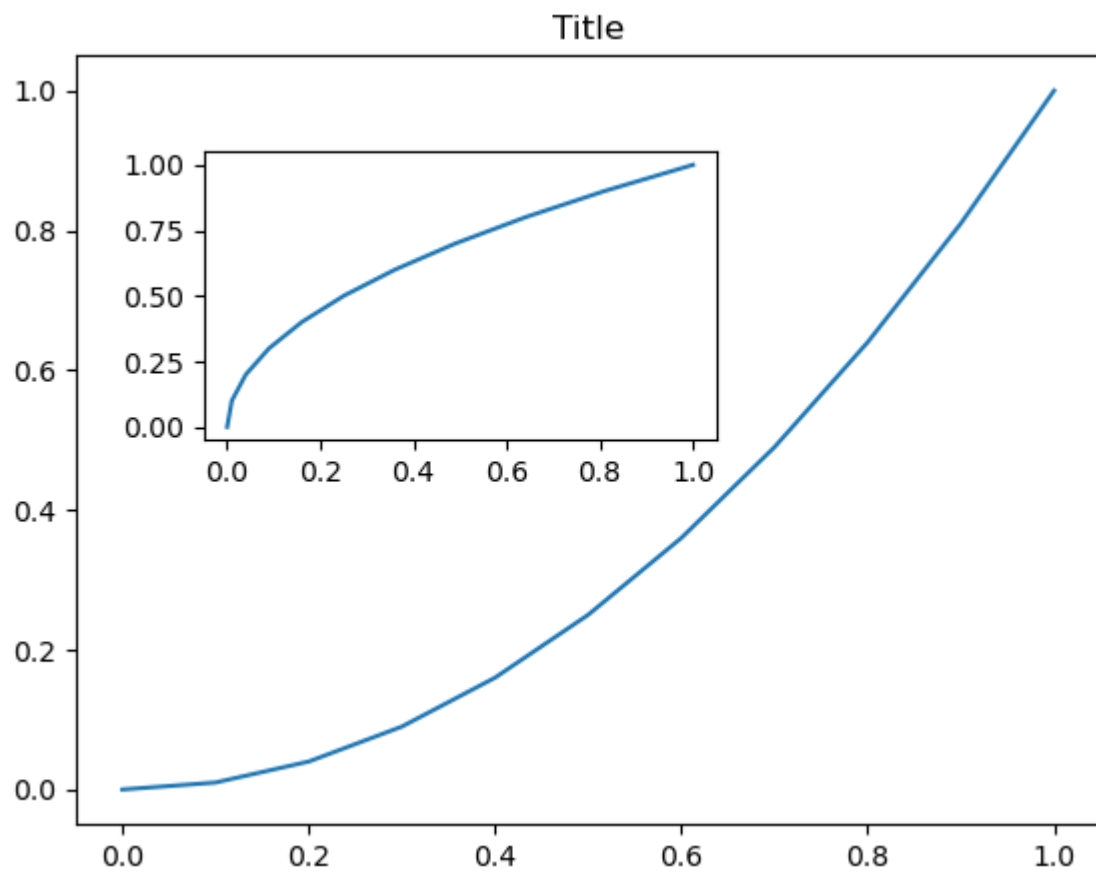**Title**

```
In [10]: fig = plt.figure()

         axes1 = fig.add_axes([0.1,0.1,0.8,0.8])
         axes2 = fig.add_axes([0.2, 0.5, 0.4, 0.3])

         axes1.plot(x,y)
         axes1.set_title('Title')
         axes2.plot(y,x)
```
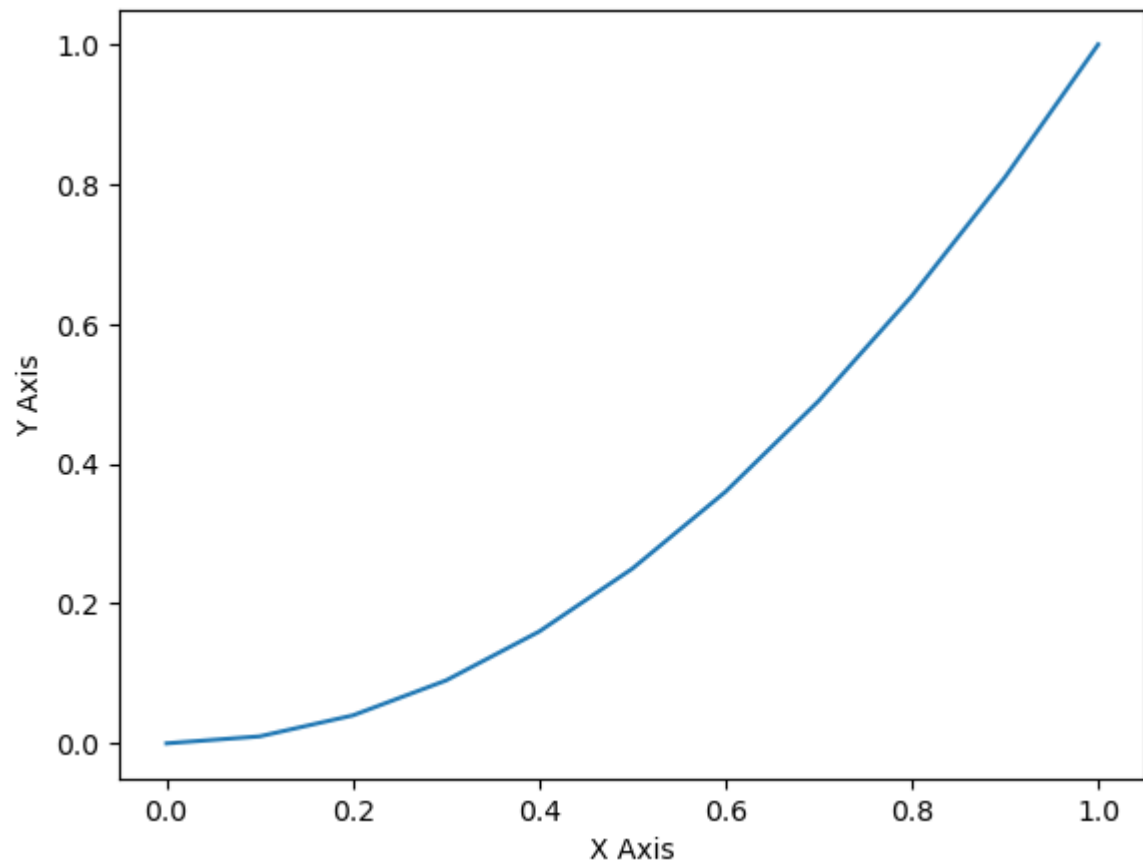
Out[10]: [<matplotlib.lines.Line2D at 0x1d73c4ff670>]

Title

```
In [11]: fig = plt.figure()
         axes1 = fig.add_axes([0.1,0.1,0.8,0.8])

         axes1.set_xlabel('X Axis')
         axes1.set_ylabel('Y Axis')
         axes1.plot(x,y)
```
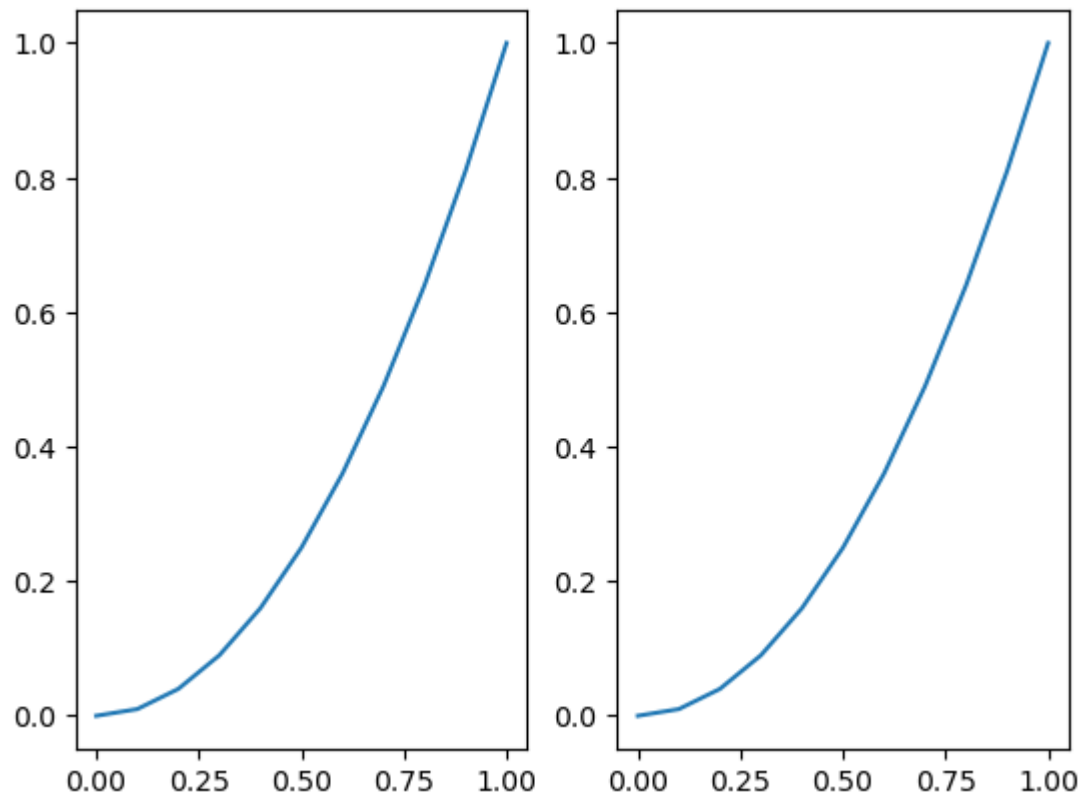
Out[11]: [<matplotlib.lines.Line2D at 0x1d73c52e830>]

```
In [14]: fig,axes = plt.subplots(nrows=1, ncols=2)

         for records in axes:
             records.plot(x,y)

         #axes.plot(x,y)
```
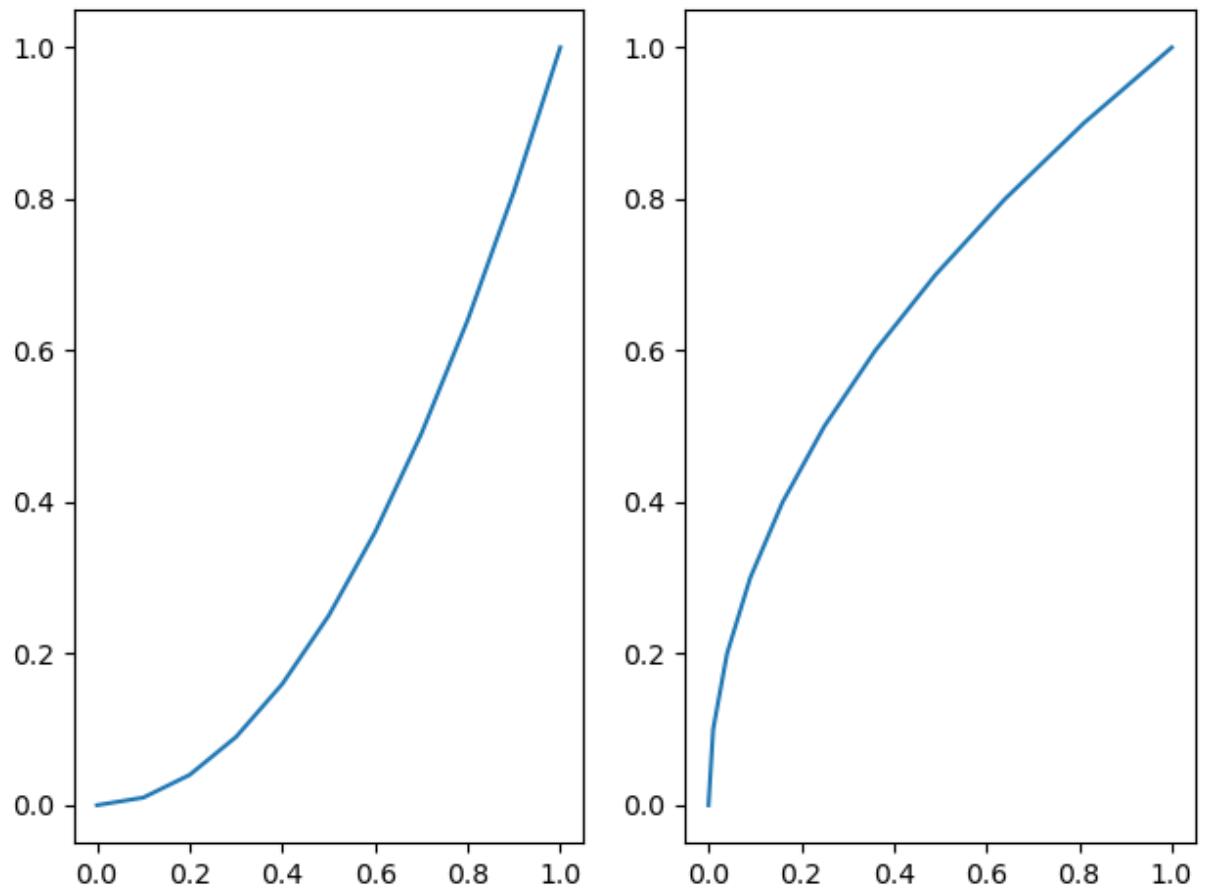
In [17]:
```python
fig,axes = plt.subplots(nrows=1, ncols=2)

axes[0].plot(x,y)
axes[1].plot(y,x)

plt.tight_layout()
```
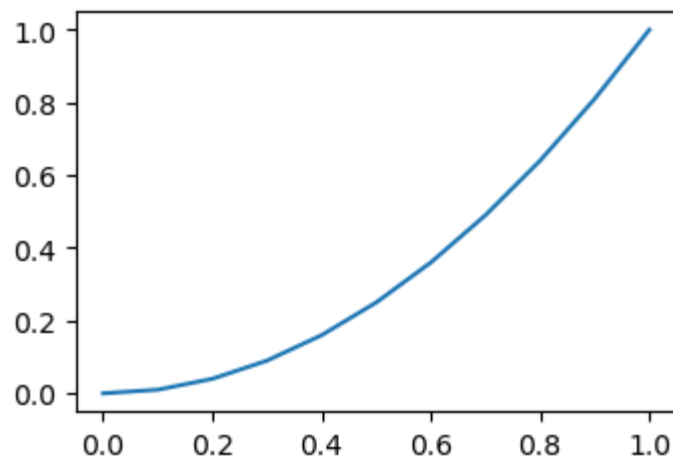
```
In [19]: fig = plt.figure(figsize=(3,2))

         ax = fig.add_axes([0,0,1,1])

         ax.plot(x,y)
```
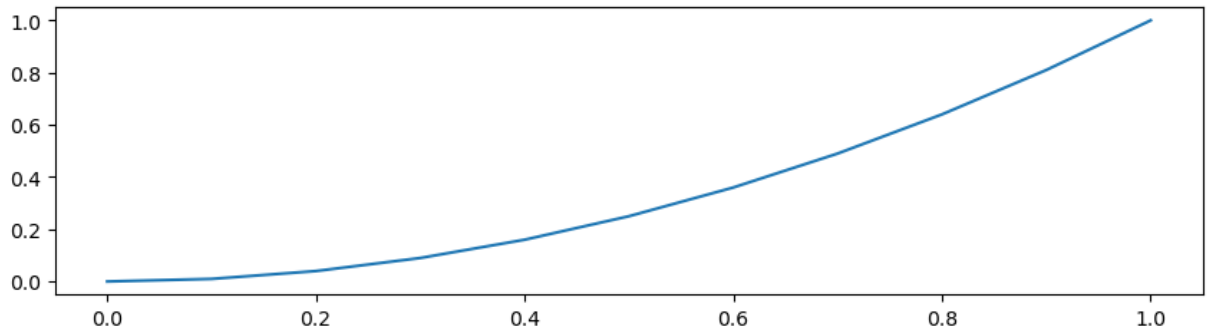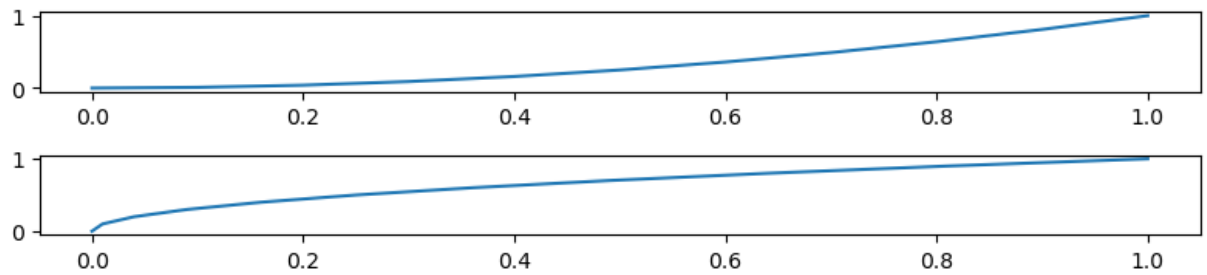
Out[19]: [<matplotlib.lines.Line2D at 0x1d740b38250>]


```
In [21]: fig = plt.figure(figsize=(8,2))

         ax = fig.add_axes([0,0,1,1])

         ax.plot(x,y)
```

[<matplotlib.lines.Line2D at 0x1d73de354b0>]

In [36]:
```python
fig,axes = plt.subplots(nrows=2, ncols=1, figsize=(8,2))

axes[0].plot(x,y)
axes[1].plot(y,x)
plt.tight_layout()
```
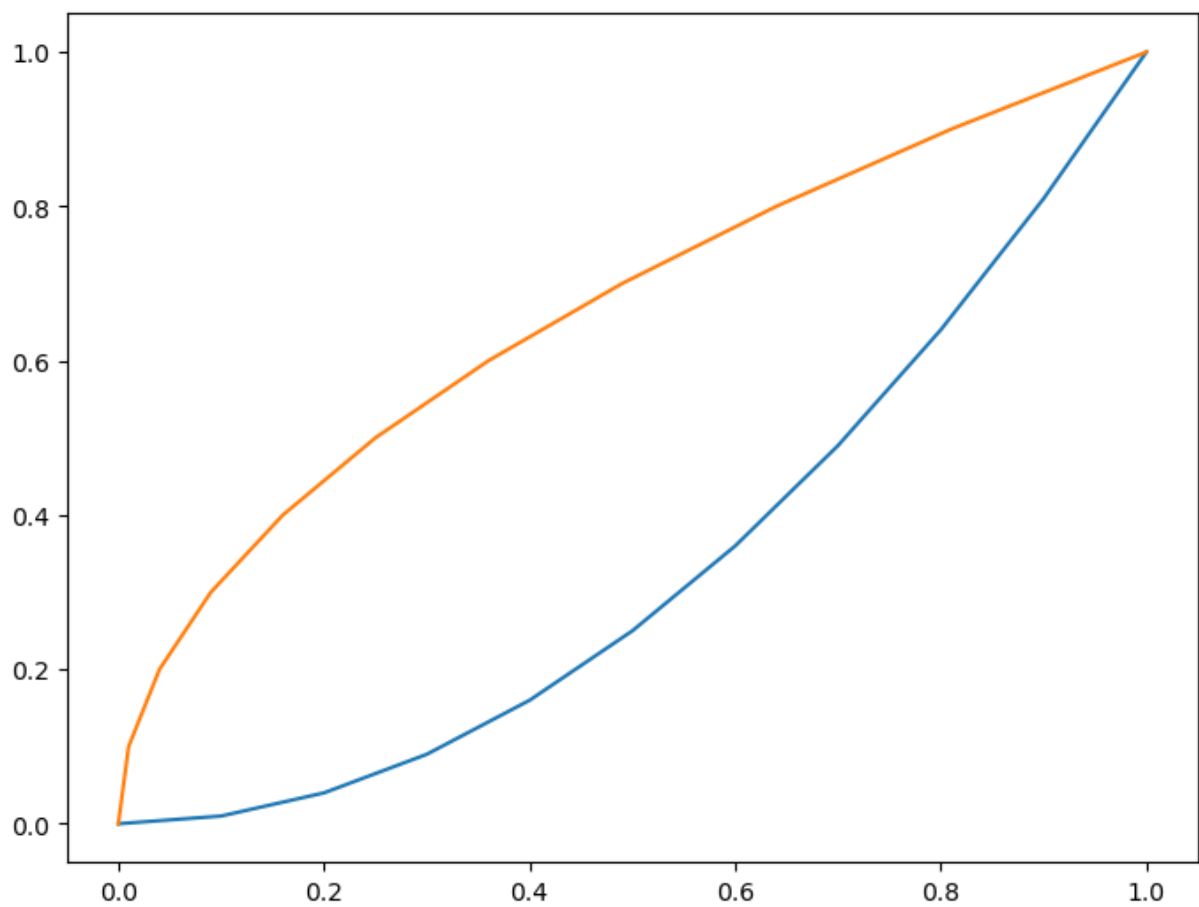

In [39]:
```python
fig.savefig('pic.png', dpi=100)
```

In [41]:
```python
fig = plt.figure()

ax = fig.add_axes([0,0,1,1])

ax.plot(x,y)
ax.plot(y,x)
```

Out[41]: [<matplotlib.lines.Line2D at 0x1d7435326e0>]
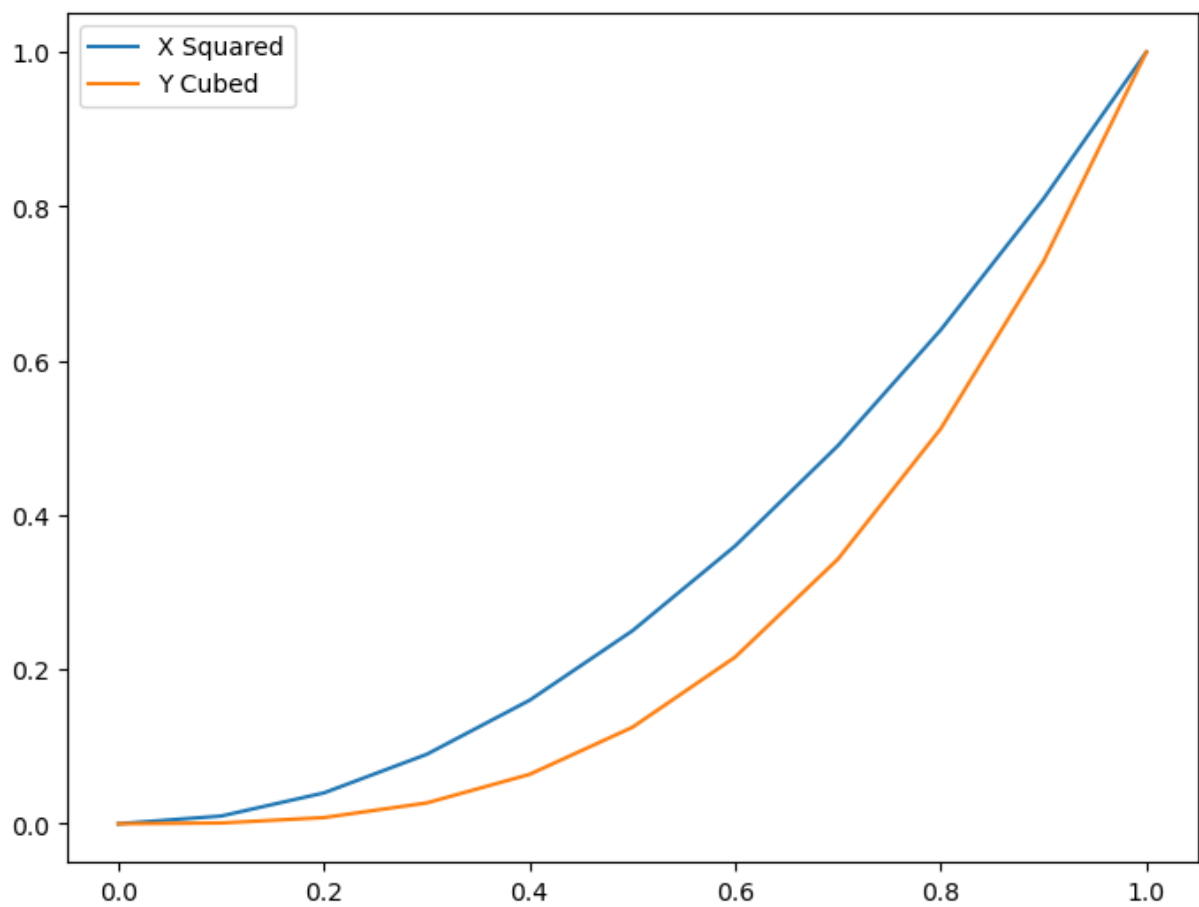
```
In [51]: fig = plt.figure()

         ax = fig.add_axes([0,0,1,1])

         ax.plot(x,x**2, label = 'X Squared')
         ax.plot(x,x**3, label = 'Y Cubed')

         ax.legend(loc=0)
         plt.show()
```

In [52]:
```python
fig = plt.figure()

ax = fig.add_axes([0,0,1,1])

ax.plot(x,x**2, label = 'X Squared')
ax.plot(x,x**3, label = 'Y Cubed')

ax.legend(loc=(0.1,0.2))
plt.show()
```
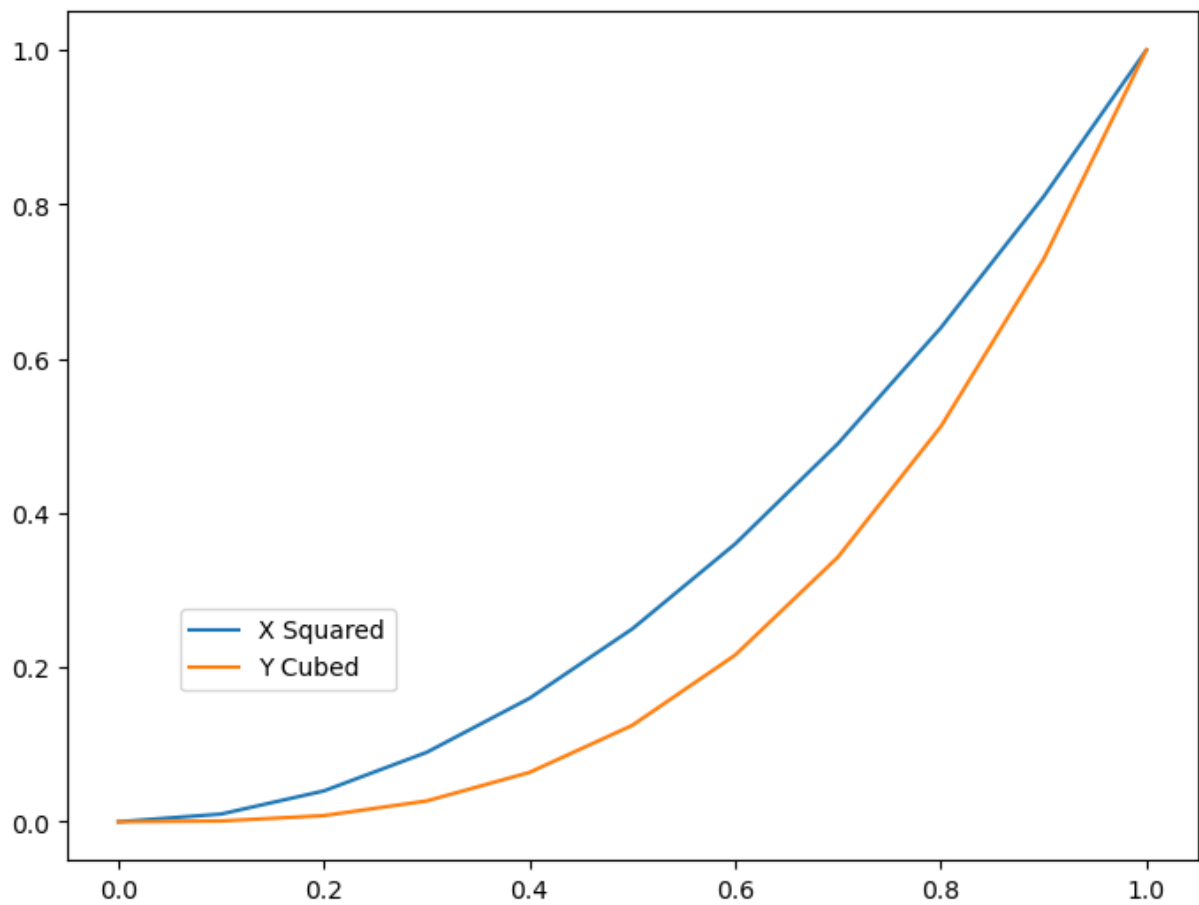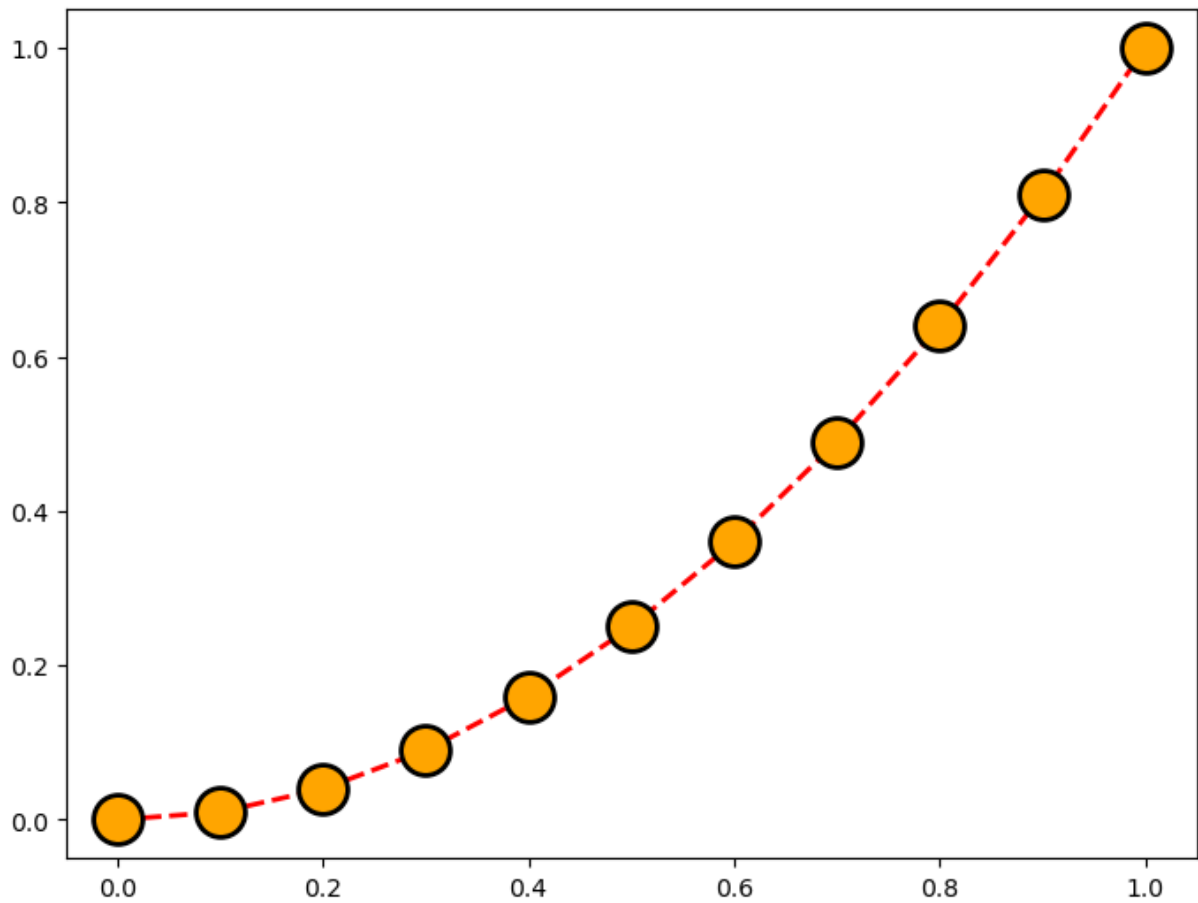
```
In [75]: fig = plt.figure()

         axes = fig.add_axes([0,0,1,1])

         axes.plot(x,y, color= 'red', lw =2, ls= '--', marker='o', markerfacecolor= 'orange'
                   markeredgewidth=2)
         plt.show()
```
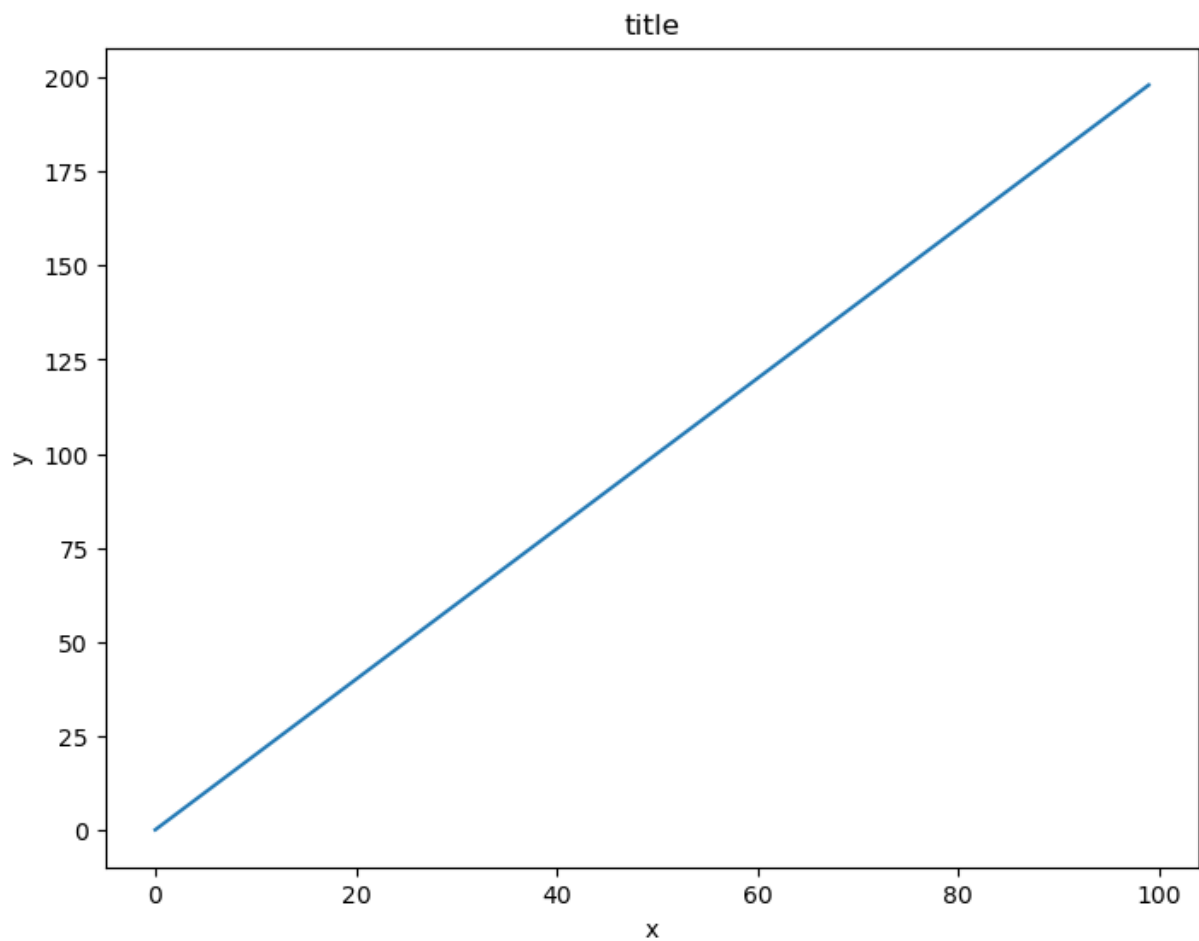
```python
import numpy as np
x = np.arange(0,100)
y = x*2
z = x**2
```

```python
import matplotlib.pyplot as plt
```

```python
fig = plt.figure()

axes = fig.add_axes([0,0,1,1])
axes.set_title('title')
axes.set_xlabel('x')
axes.set_ylabel('y')
axes.plot(x,y)
```
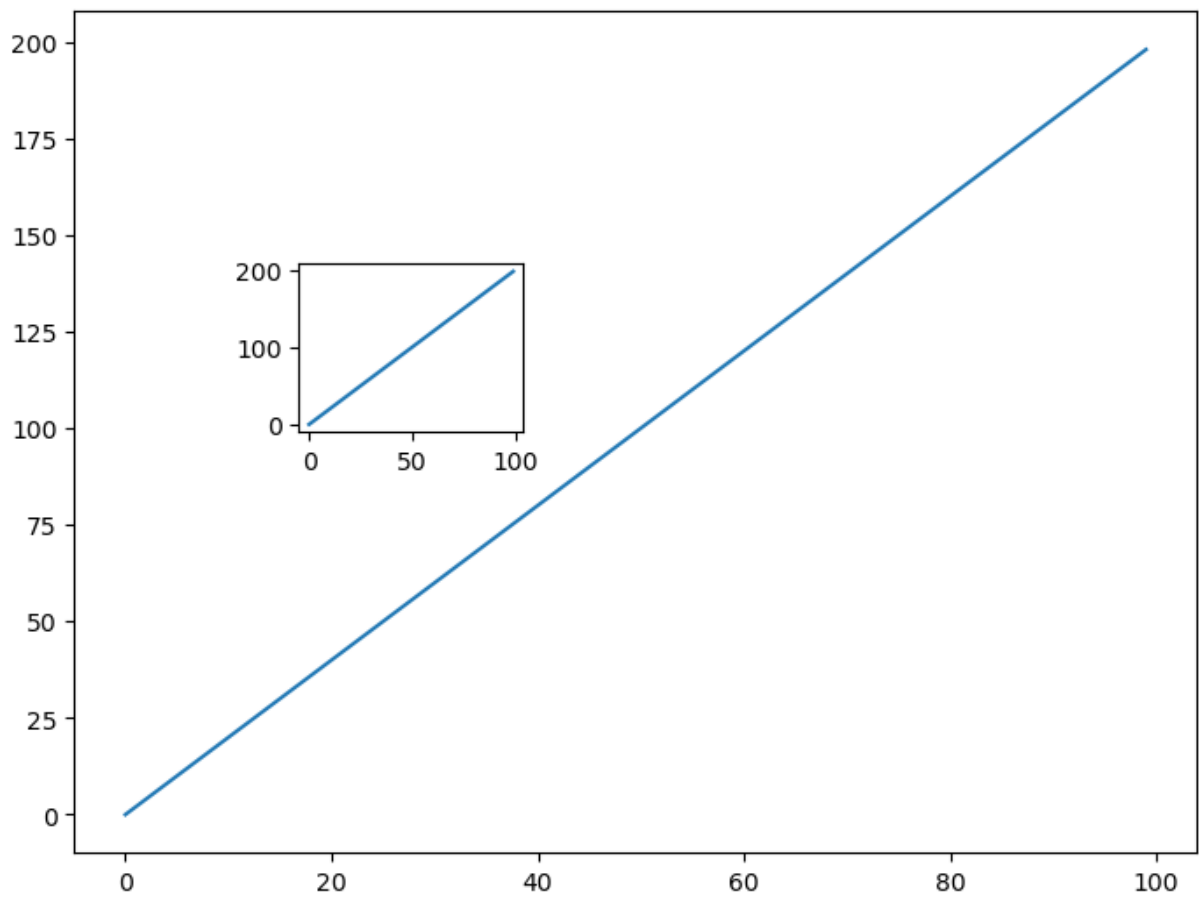
[<matplotlib.lines.Line2D at 0x25e1108d930>]

```
In [14]: fig = plt.figure()

axes1 = fig.add_axes([0,0,1,1])
axes2 = fig.add_axes([0.2,0.5,.2,.2])

axes1.plot(x,y)
axes2.plot(x,y)
```
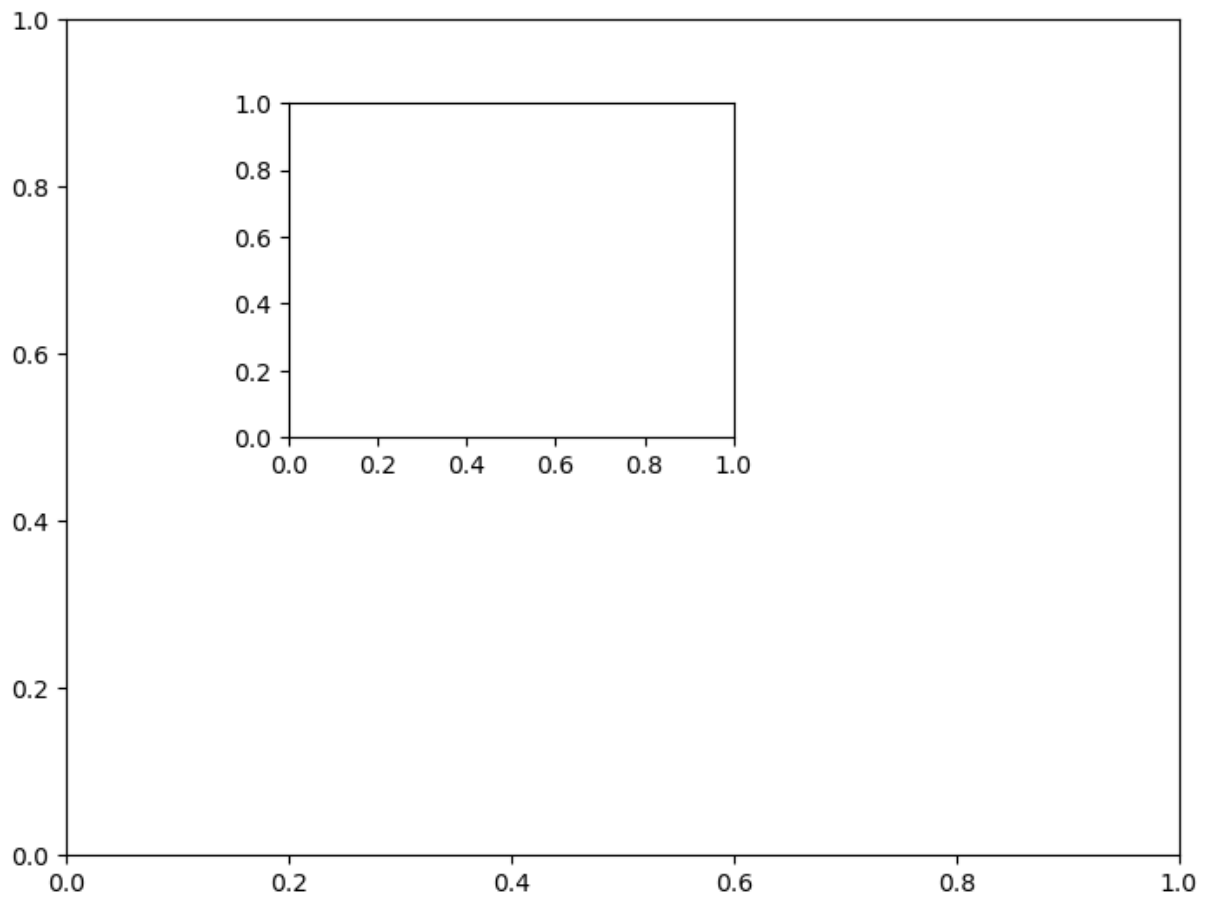
Out[14]: [<matplotlib.lines.Line2D at 0x25e10583cd0>]

```
In [22]: fig = plt.figure()

         axes1 = fig.add_axes([0,0,1,1])
         axes2 = fig.add_axes([0.2,0.5,.4,.4])
```
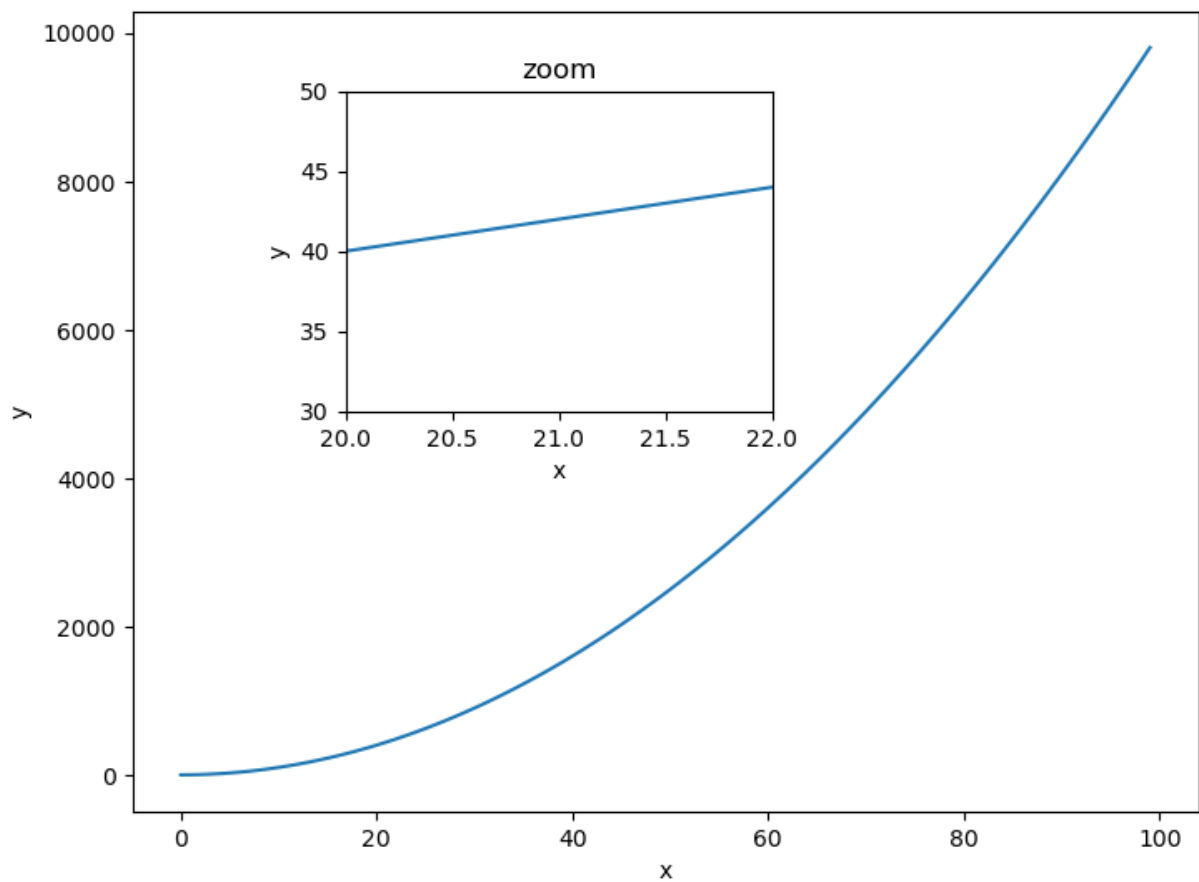
```
fig = plt.figure()

ax1 = fig.add_axes([0,0,1,1])
ax2 = fig.add_axes([0.2,0.5,.4,.4])

ax1.plot(x,z)
ax1.set_xlabel('x')
ax1.set_ylabel('y')

ax2.plot(x,y)
ax2.set_xlabel('x')
ax2.set_ylabel('y')
ax2.set_title('zoom')
ax2.set_xlim([20,22])
ax2.set_ylim([30,50])
```
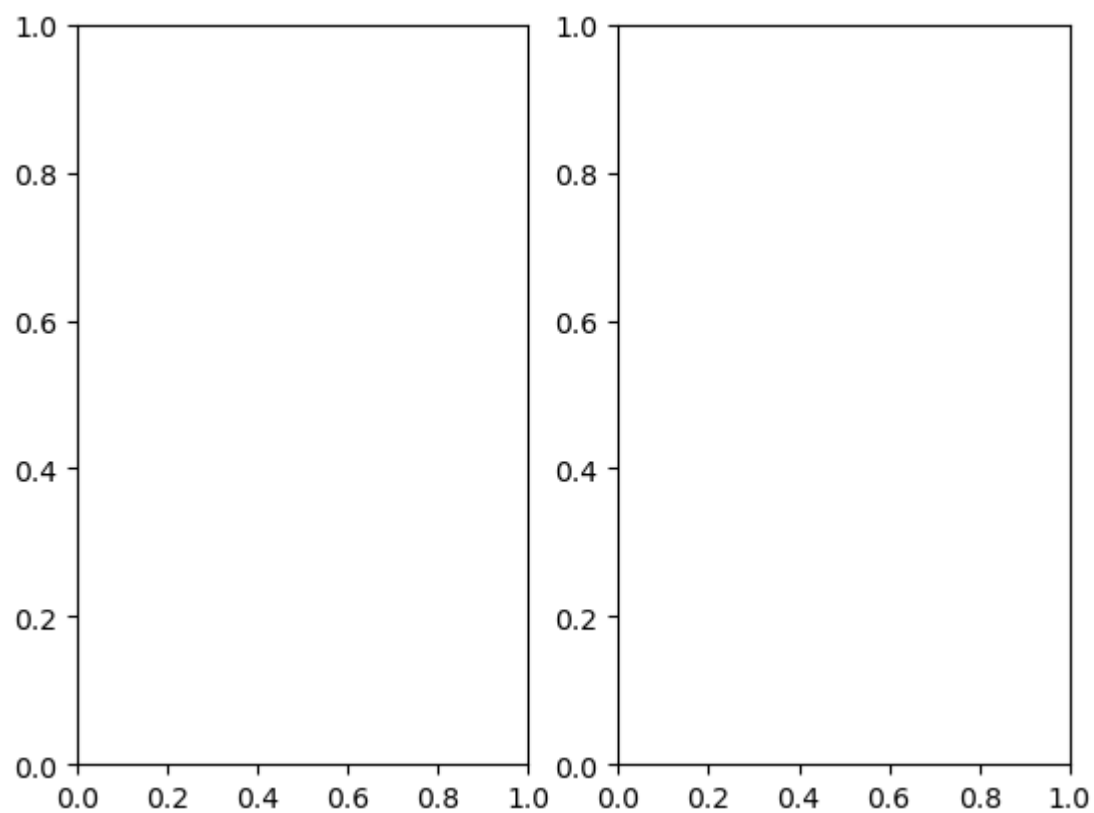
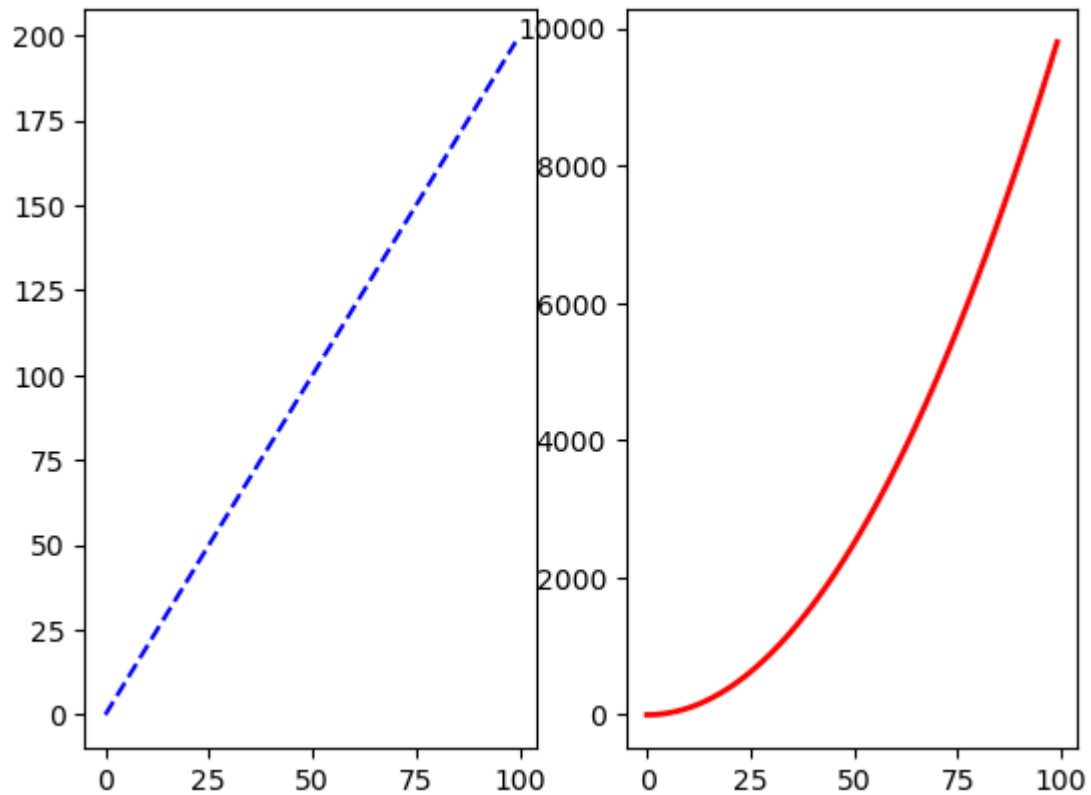(30.0, 50.0)

`fig = plt.subplots(nrows=1, ncols=2)`

`%matplotlib inline`

```
In [63]: fig, axes = plt.subplots(nrows=1, ncols=2)

         axes[0].plot(x,y, color = 'blue', ls = '--')
         axes[1].plot(z, color = 'red', lw = 2)
```
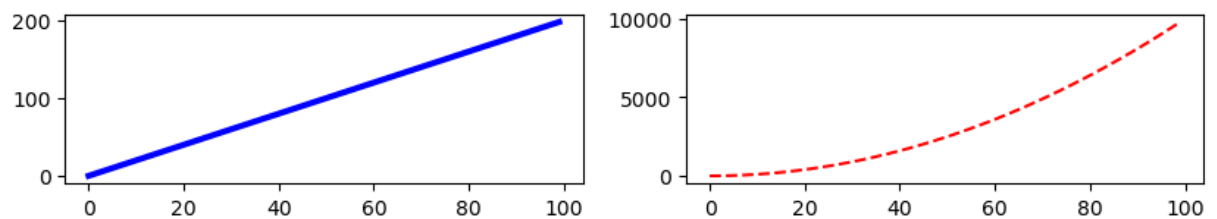
Out[63]: [<matplotlib.lines.Line2D at 0x25e10532650>]


```
In [69]: fig, axes = plt.subplots(nrows=1, ncols=2, figsize = (10,1.5))

         axes[0].plot(x,y, color = 'blue', ls = '-', lw = 3)
         axes[1].plot(z, color = 'red', ls = '--')
```

Out[69]: [<matplotlib.lines.Line2D at 0x25e18789600>]

In [ ]: