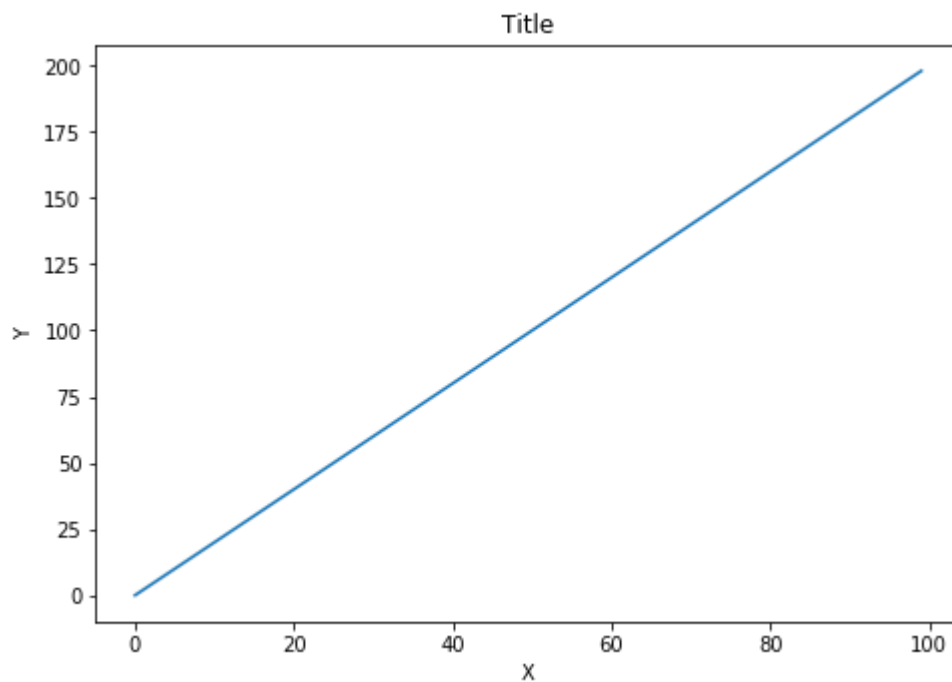In [1]:
```python
import numpy as np
x=np.arange(0,100)
y=x*2
z=x**2
```

#Excercise1

In [2]:
```python
import matplotlib.pyplot as plt
%matplotlib inline
fig = plt.figure()
ax=fig.add_axes([0,0,1,1])
ax.plot(x,y)
ax.set_xlabel('X')
ax.set_ylabel('Y')
ax.set_title('Title')
```
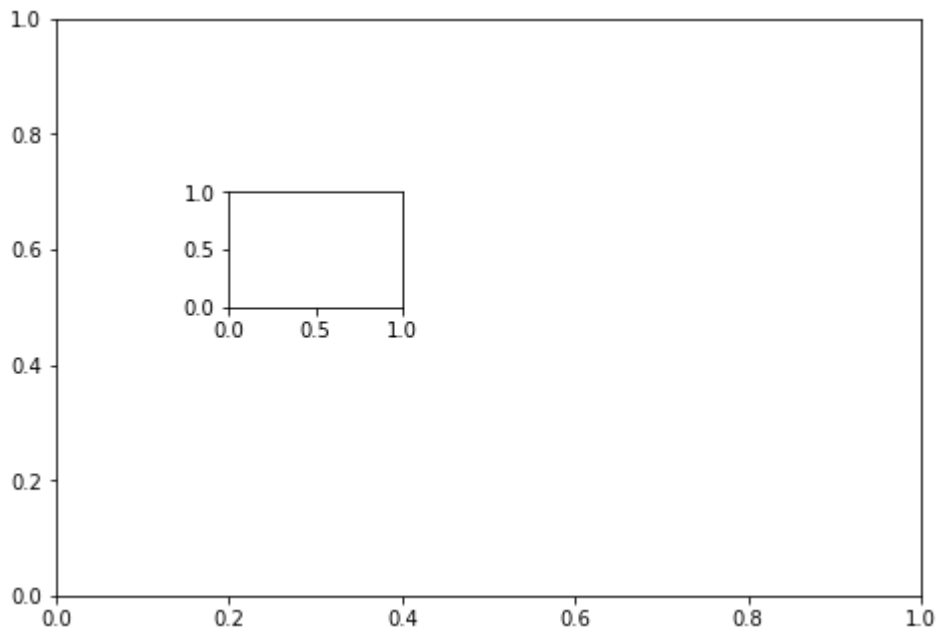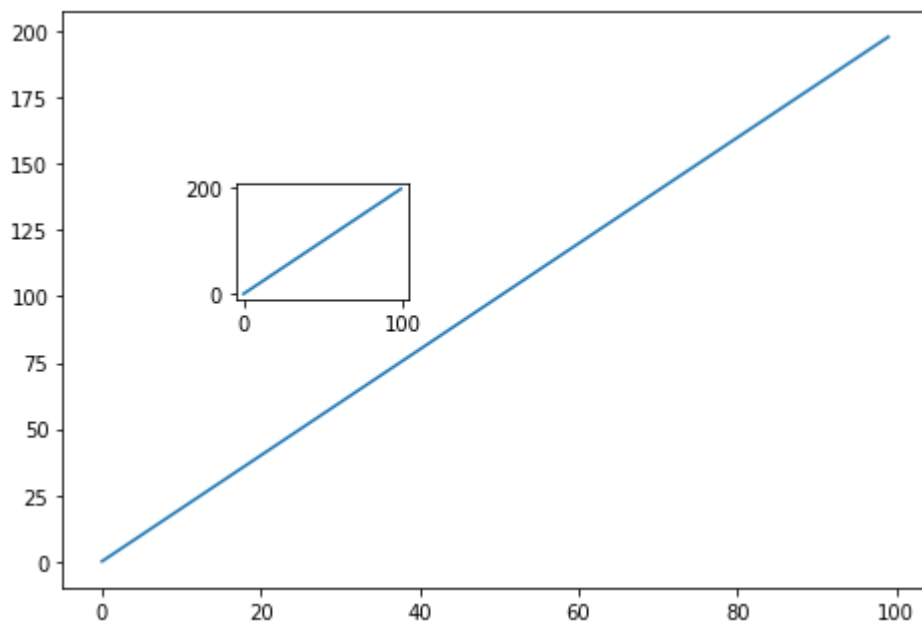
Out[2]: Text(0.5,1,'Title')

#Excercise 2

In [3]:
```
1  fig = plt.figure()
2  ax1=fig.add_axes([0,0,1,1])
3  ax2 =fig.add_axes([0.2,0.5,.2,.2])
```
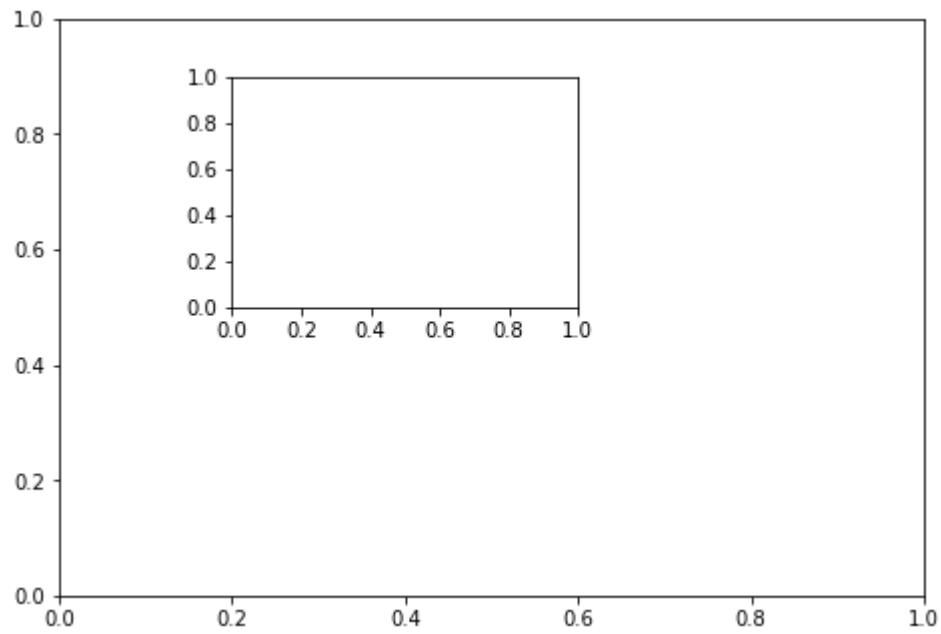

In [4]:
```
1  fig = plt.figure()
2  ax1=fig.add_axes([0,0,1,1])
3  ax2 =fig.add_axes([0.2,0.5,0.2,0.2])
4  ax1.plot(x,y)
5  ax2.plot(x,y)
```
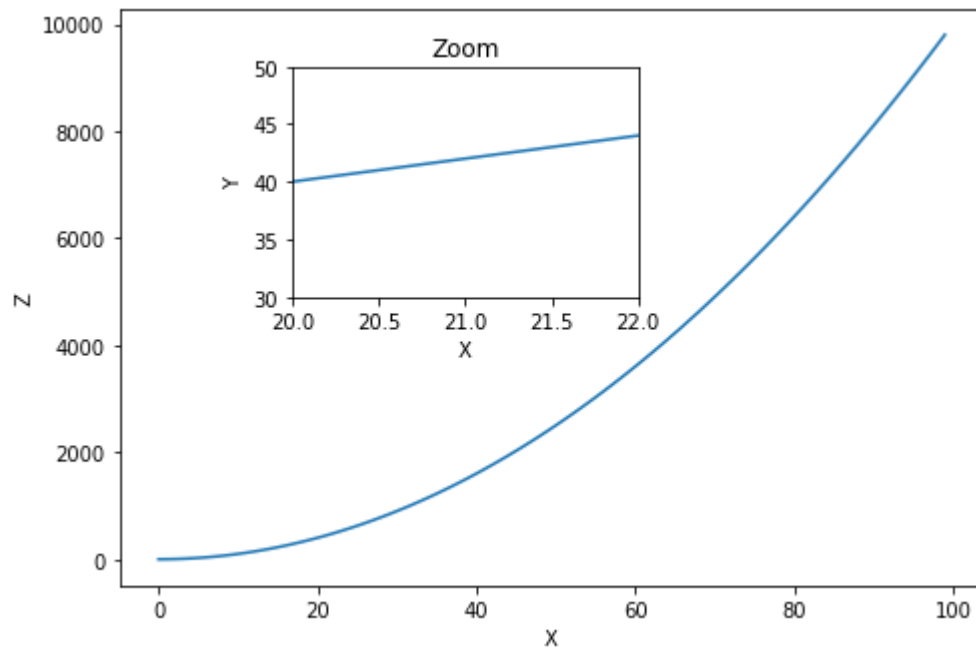
Out[4]: [<matplotlib.lines.Line2D at 0x7da4128>]

#Excercise 3

In [5]:
```python
fig = plt.figure()
ax1=fig.add_axes([0,0,1,1])
ax2 =fig.add_axes([0.2,0.5,.4,.4])
```

In [6]:
```python
1  ax1.plot(x,z)
2  ax1.set_xlabel('X')
3  ax1.set_ylabel('Z')
4
5  ax2.plot(x,y)
6  ax2.set_xlabel('X')
7  ax2.set_ylabel('Y')
8  ax2.set_title("Zoom")
9  ax2.set_xlim(20,22)
10 ax2.set_ylim(30,50)
11
12 fig
```

Out[6]:

#Excercise 4

In [7]:
```python
1  plt.subplots(nrows=1,ncols=2)
```

Out[7]:   (<Figure size 432x288 with 2 Axes>,
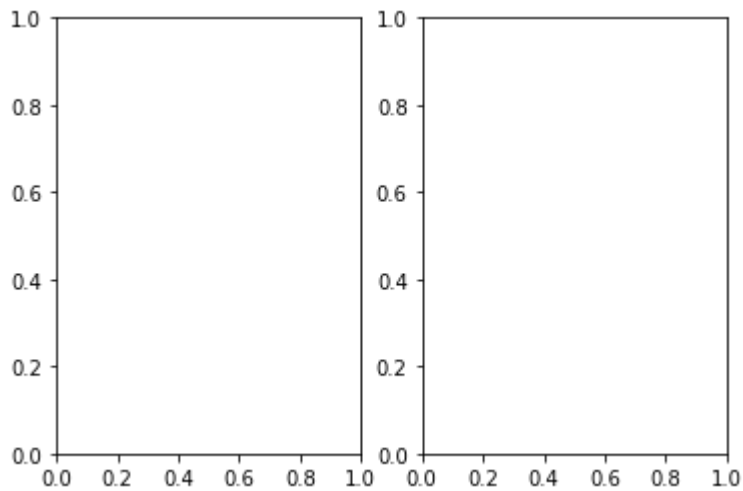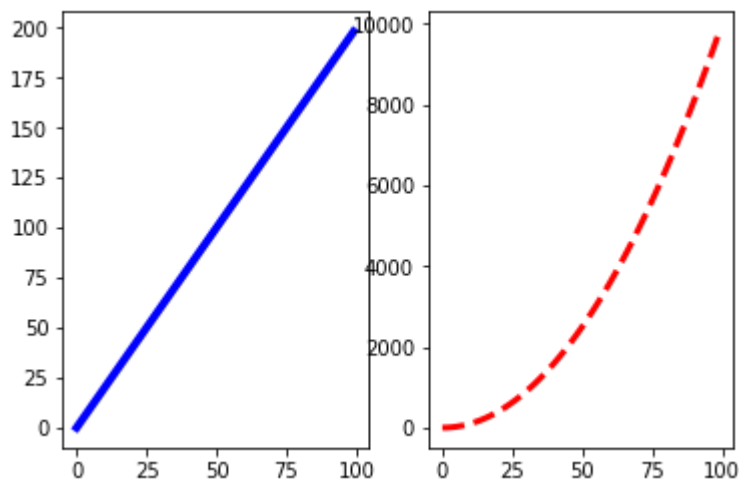   array([<matplotlib.axes._subplots.AxesSubplot object at 0x0000000007E89400>,
                   <matplotlib.axes._subplots.AxesSubplot object at 0x0000000007EC5BE0>],
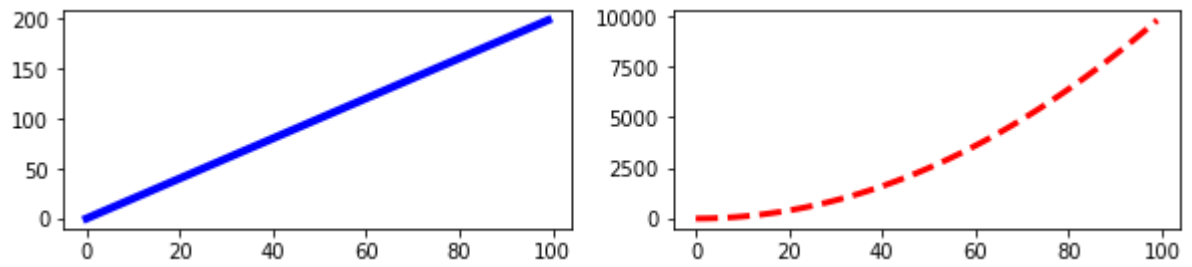   dtype=object))

In [8]:
```python
1  fig,axes = plt.subplots(nrows=1,ncols=2)
2  axes[0].plot(x,y,'b',lw=4)
3  axes[1].plot(x,z,'r--',lw=3)
```

Out[8]:   [<matplotlib.lines.Line2D at 0x7f8ba20>]

In [9]:
```python
1  fig,axes = plt.subplots(nrows=1,ncols=2,figsize=(10,2))
2  axes[0].plot(x,y,'b',lw=4)
3  axes[1].plot(x,z,'r--',lw=3)
```

Out[9]: [<matplotlib.lines.Line2D at 0x803ccc0>]

In [ ]:
```python
1
```