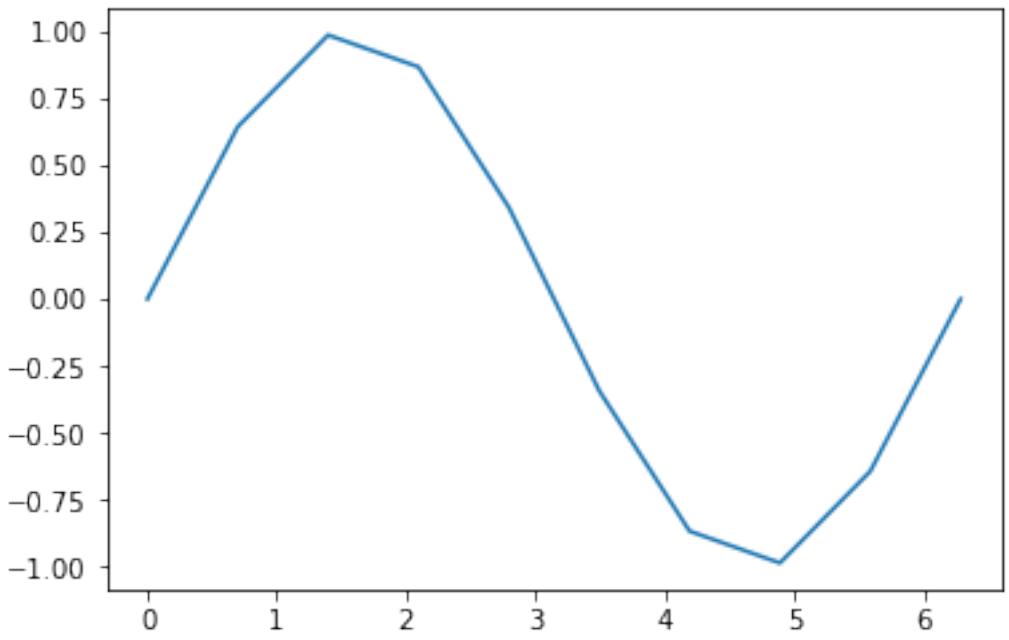
Day2pm

June 12, 2018

```
In [43]: import matplotlib.pyplot as plt
         import matplotlib
         import numpy as np
         import math
         %matplotlib inline
```

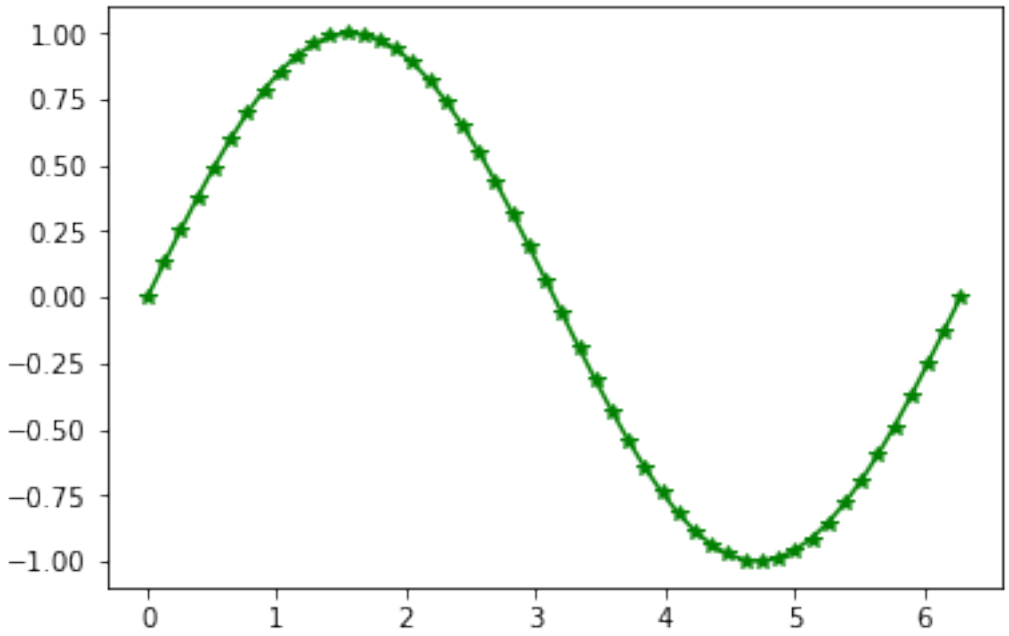
```
In [80]: x = np.linspace(0,math.pi*2,10)
         y = np.sin(x)
```

```
In [81]: plt.plot(x,y)
         plt.show()
```

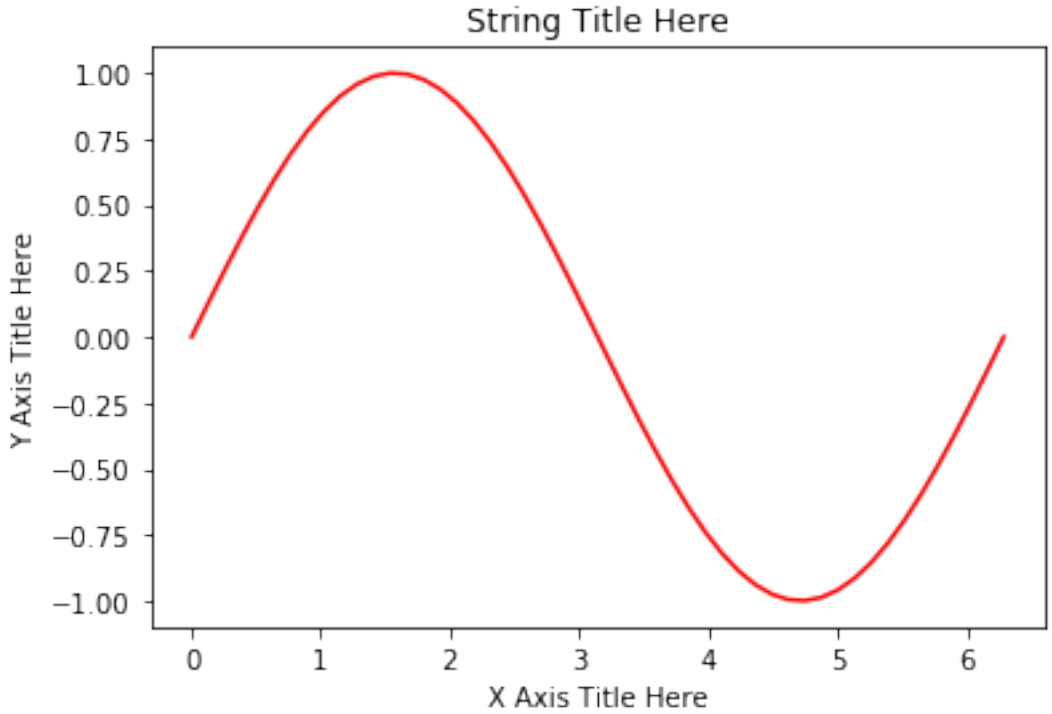



```
In [10]: plt.plot(x,y,'g*-')
```

```
Out[10]: [<matplotlib.lines.Line2D at 0x7f0b54ee8b38>]
```

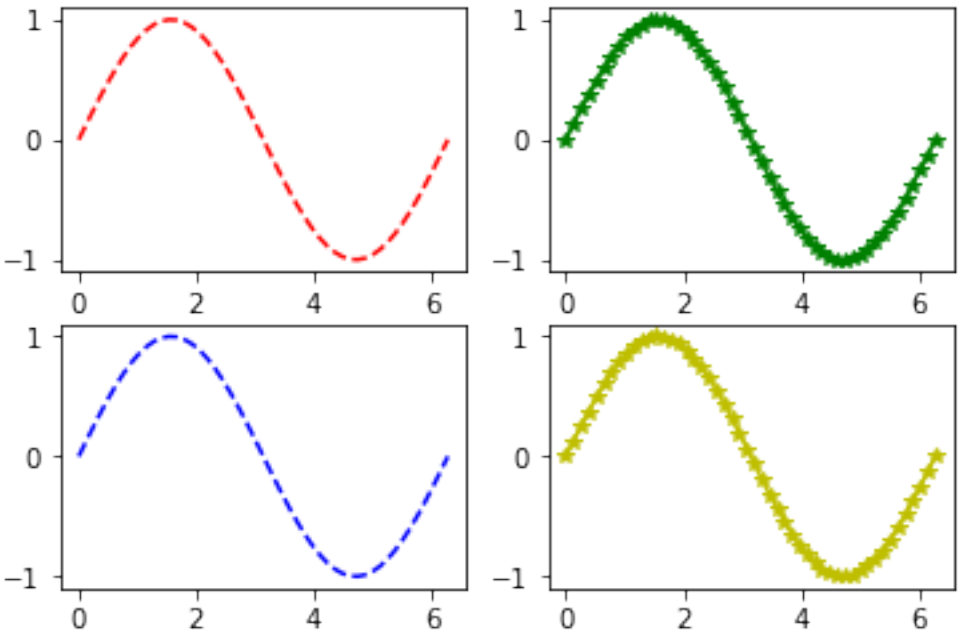


In [13]:
```
plt.plot(x, y, 'r')
plt.xlabel('X Axis Title Here')
plt.ylabel('Y Axis Title Here')
plt.title('String Title Here')
plt.show()
```

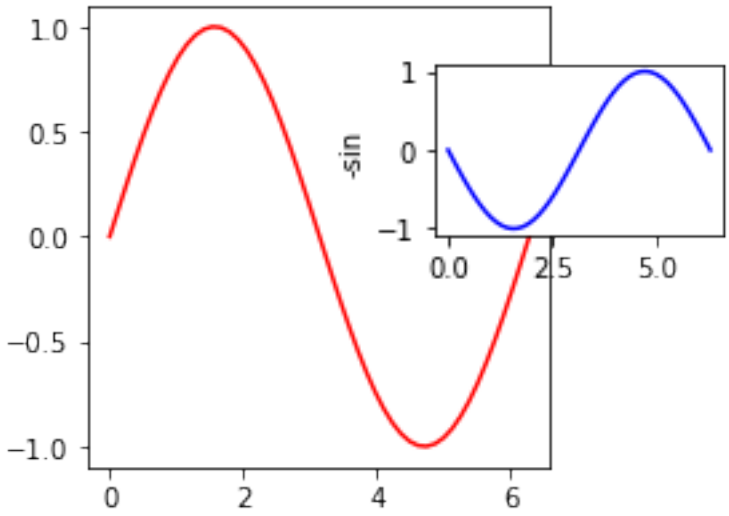


In [15]:
```
plt.subplot(2,2,1)
plt.plot(x, y, 'r--')
plt.subplot(2,2,2)
plt.plot(x, y, 'g*-')
plt.subplot(2,2,3)
plt.plot(x, y, 'b--')
plt.subplot(2,2,4)
plt.plot(x, y, 'y*-')
```

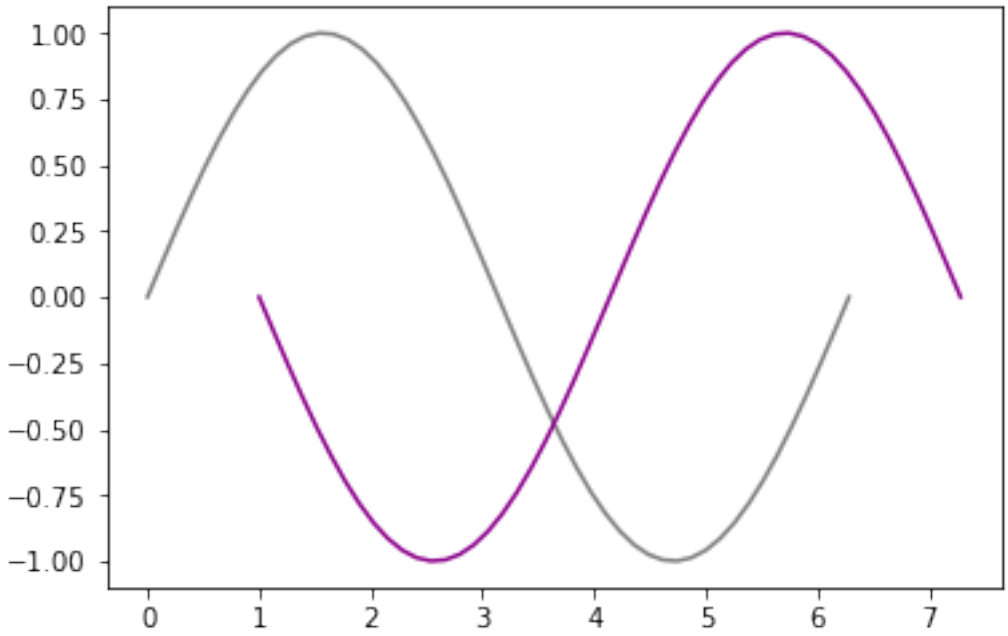
Out[15]:
```
[<matplotlib.lines.Line2D at 0x7f0b54e770f0>]
```



In [37]:
```
fig = plt.figure()
fig1 = fig.add_axes([0.1,0.1,0.8,0.8])
fig2 = fig.add_axes([0.7,0.5,0.5,0.3])
fig1.plot(x,y,'r')
fig2.plot(x,-y,'b')
fig2.set_ylabel("-sin")
fig.set_size_inches(3,3)
fig.savefig("twosines.png", dpi=600)
```

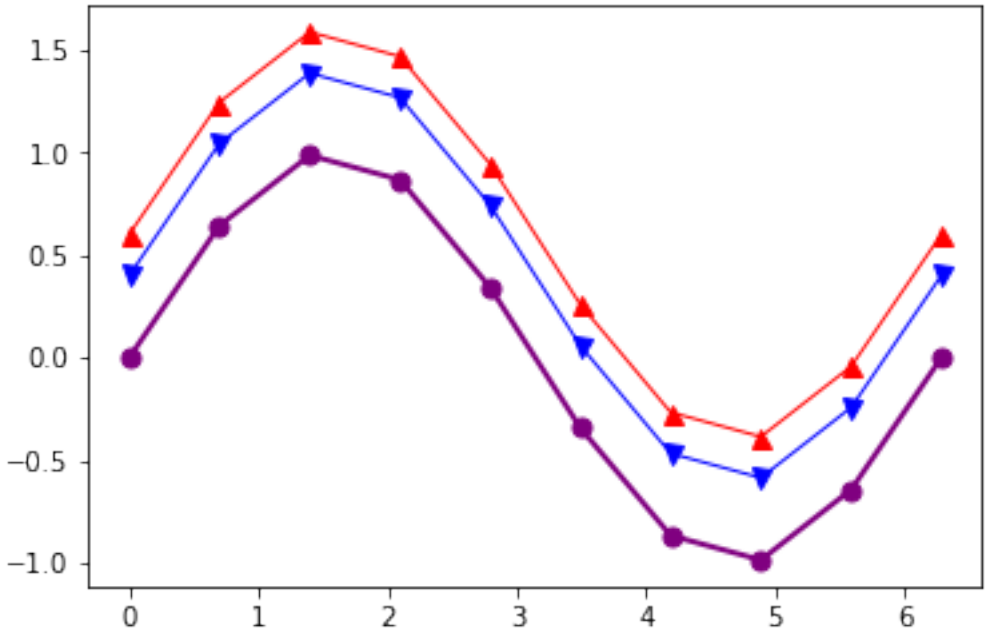


In [52]:
```
plt.plot(x,y, color=matplotlib.colors.rgb2hex((0,0,0)), alpha=0.5)
plt.plot(x+1,-y, color = "#8B008B")
plt.show()
```



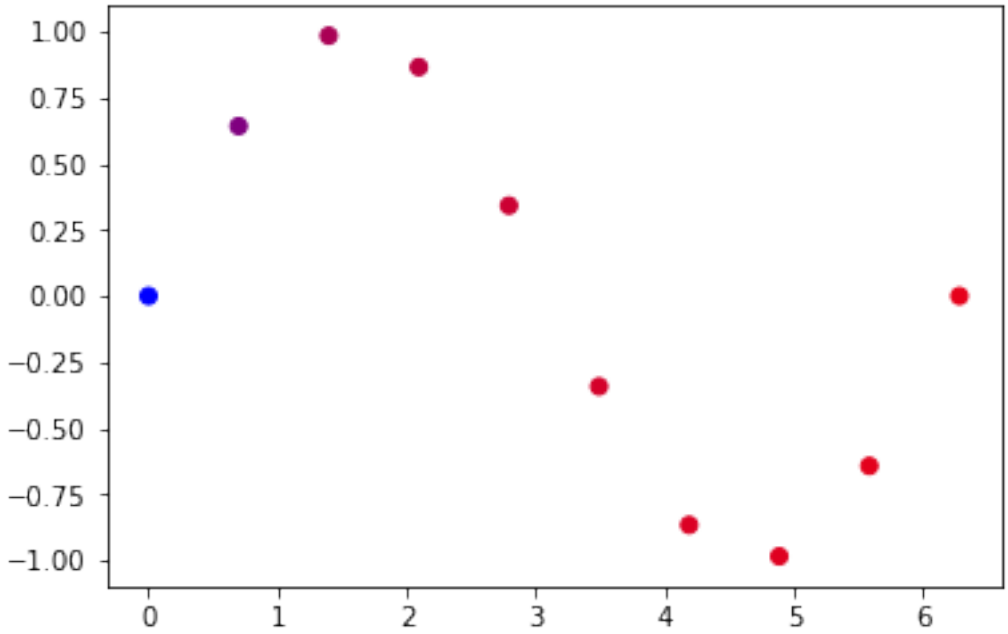
In [82]:
```
plt.plot(x,y,color="purple",      lw = 2, ls="-", marker="o", markersize=7)
#plt.plot(x,y+0.2,color=[matplotlib.colors.rgb2hex((0,0,1/(i+1))) for i in range(50) ],
plt.plot(x,y+0.4,color="blue", lw = 1, ls="-", marker="v", markersize=7)
plt.plot(x,y+0.6,color="red", lw = 1, ls="-", marker="^", markersize=7)
```

Out[82]: [<matplotlib.lines.Line2D at 0x7f0b53767f98>]

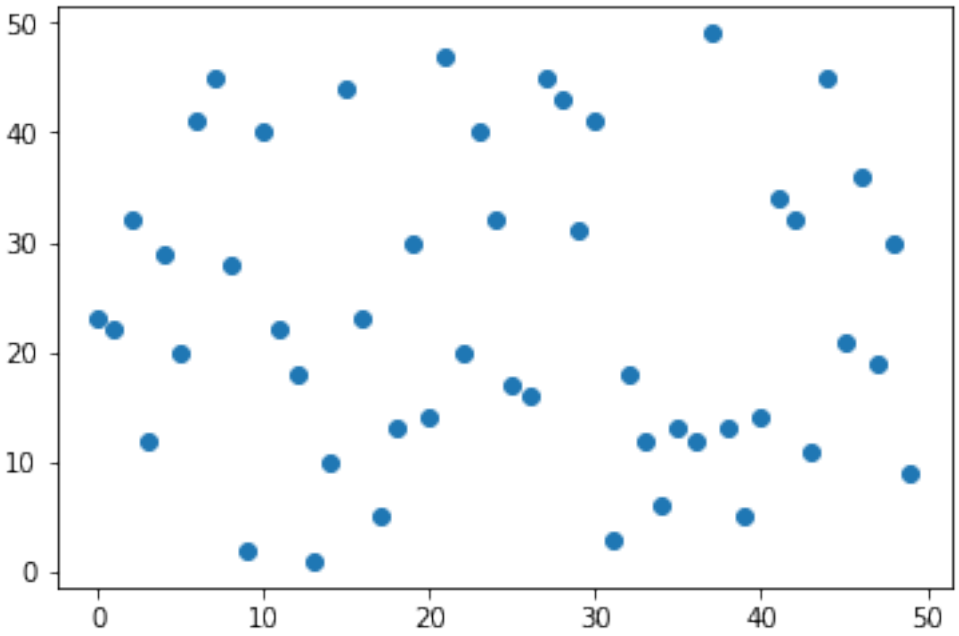


In [86]:
```
#plt.plot(x,y+0.2,color=, lw = 3, ls="-", marker="*", markersize=7)
plt.scatter(x,y,c=[matplotlib.colors.rgb2hex((1-1/(i+1),0,1/(i+1))) for i in range(10)]
```

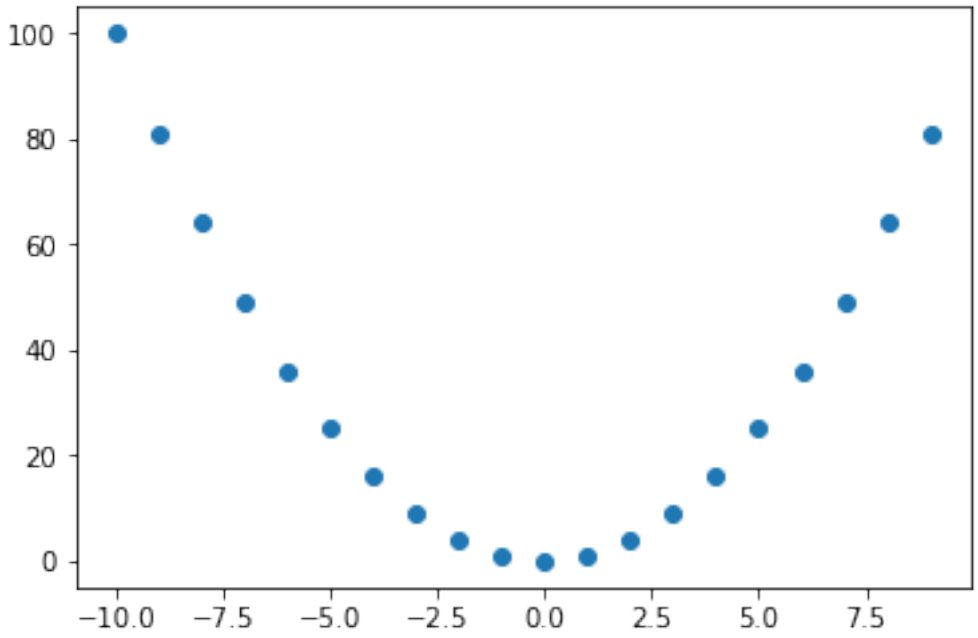
Out[86]: <matplotlib.collections.PathCollection at 0x7f0b53aa4208>



```
In [88]: x = np.arange(50)
         y = np.random.randint(1,50,50)

In [89]: plt.scatter(x,y)

Out[89]: <matplotlib.collections.PathCollection at 0x7f0b53cf6208>
```

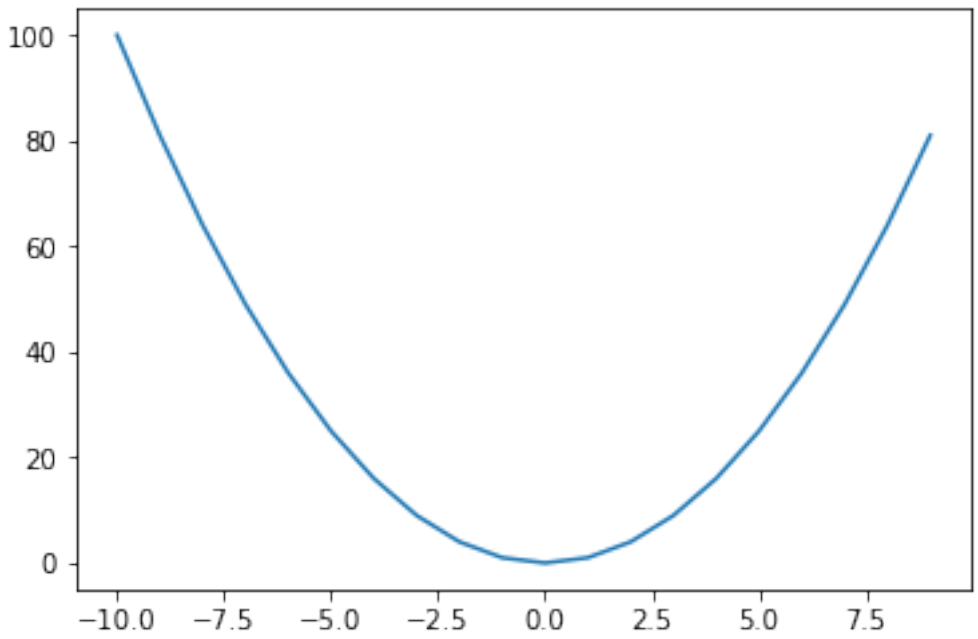



```
In [97]: x = np.arange(-10,10)
         y = x**2

In [98]: plt.scatter(x,y)

Out[98]: <matplotlib.collections.PathCollection at 0x7f0b534fd080>
```



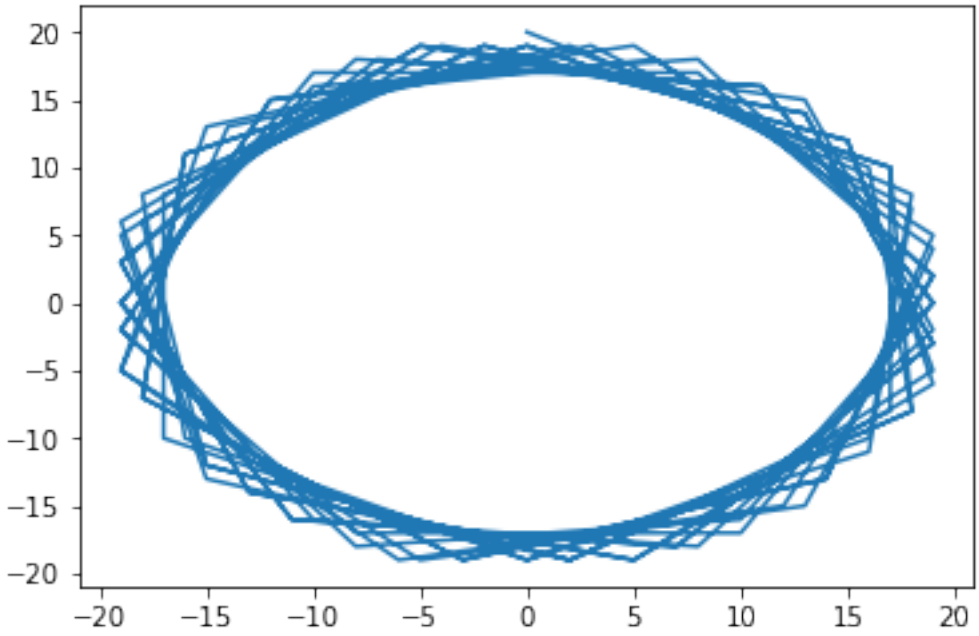
In [92]: plt.plot(x,y)

Out[92]: [<matplotlib.lines.Line2D at 0x7f0b53ef6978>]



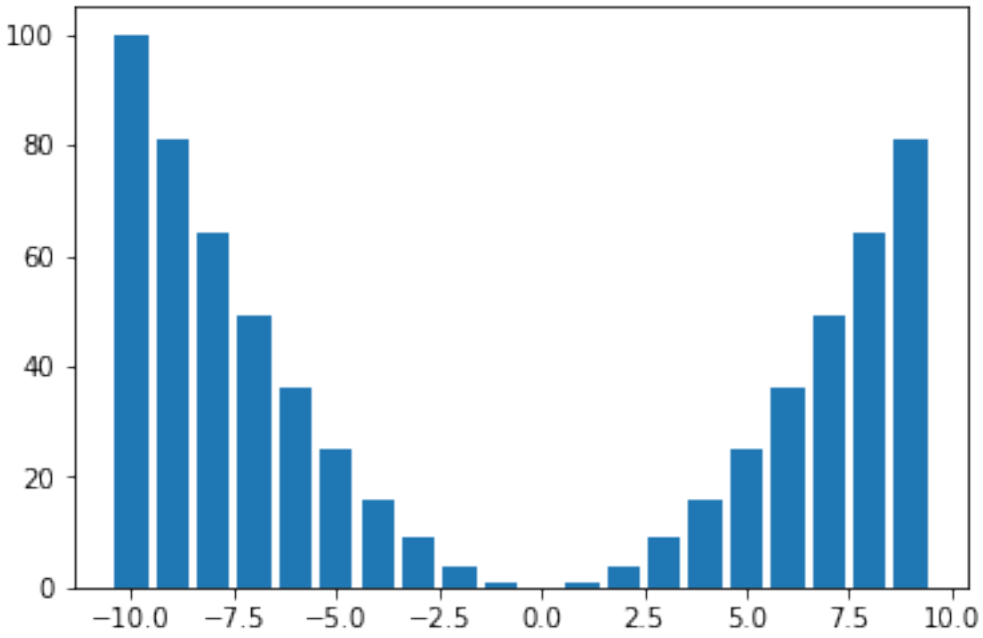
In [95]:
```
x = [int(math.sin(i)*20) for i in range(0,100)]
y = [int(math.cos(i)*20) for i in range(0,100)]
plt.plot(x,y)
```

Out[95]: [<matplotlib.lines.Line2D at 0x7f0b53645b38>]

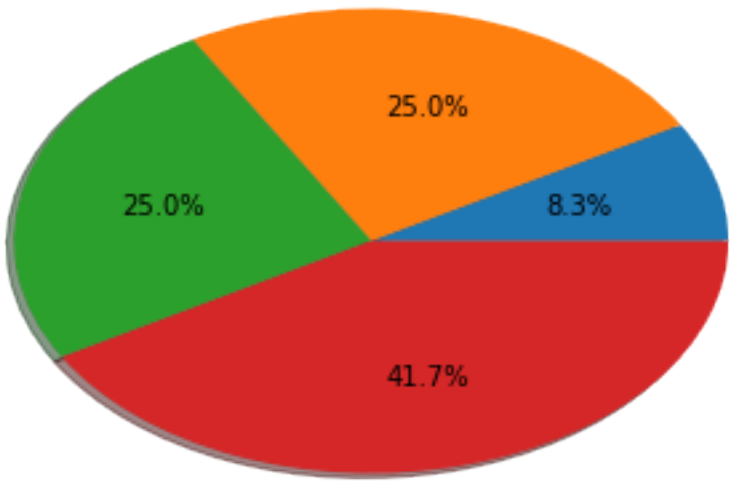


In [100]:
```
x = np.arange(-10,10)
y = x**2
plt.bar(x,y)
```

Out[100]: <BarContainer object of 20 artists>




```
In [105]: plt.pie([1,3,3,5], shadow=True, autopct="%1.1f%%")
          plt.show()
```




```
In [108]: x1 = [20,22]
          y1 = [40,44]
```

```
plt.ylim([30,50])
plt.xlim([20,22])
plt.plot(x1,y1)
```

Out[108]: [<matplotlib.lines.Line2D at 0x7f0b5341e128>]