Problem 1

Plot a scatter plot of Data using the first column as x and the first column as y, using red points.

```
import numpy as np
import matplotlib.pyplot as plt
#input
x=np.random.randn(15)
Data=np.hstack([x[:,None],x[:,None]])

x = Data[:,0]
y = Data[:,1]
plt.scatter(x,y,color='red')
```

Problem 2

Plot a scatter plot of Data using the first column as x and the first column as y, and add the label "x" and "y" to the respective columns using `fontsize` 14.

```
import numpy as np
import matplotlib.pyplot as plt
#input
x=np.random.randn(15)
Data=np.hstack([x[:,None],x[:,None]])

x = Data[:,0]
y = Data[:,1]
plt.scatter(x,y,color='red')
plt.xlabel("x", fontsize=14)
plt.ylabel("y", fontsize=14)
plt.show
```

Problem 4

Plot the graph of the function $\cos(8 x)$ for $x \in[0,1]$ and add the label "x" and "cos(8x)" to the respective columns using fontsize 14.

```
import numpy as np
import matplotlib.pyplot as plt
#input
x = np.linspace(0, 1, 100)
plt.plot(x, np.cos(x))
plt.xlabel("x", fontsize=14)
plt.ylabel("cos(8x)", fontsize=14)
plt.show
```

Problem 5

Plot the histogram of Data using 30 bins.

```
import numpy as np
import matplotlib.pyplot as plt
#input
Data=np.random.randn(2000)
plt.hist(Data, bins=30)
plt.show()
```