In [1]:

```
import pandas as pd
```

In [75]:

```
data1 = pd.read_csv('Cars.csv')
data1
```

Out[75]:

	HP	MPG	VOL	SP	WT
0	49	53.700681	89	104.185353	28.762059
1	55	50.013401	92	105.461264	30.466833
2	55	50.013401	92	105.461264	30.193597
3	70	45.696322	92	113.461264	30.632114
4	53	50.504232	92	104.461264	29.889149
...	...	...	...	...	...
76	322	36.900000	50	169.598513	16.132947
77	238	19.197888	115	150.576579	37.923113
78	263	34.000000	50	151.598513	15.769625
79	295	19.833733	119	167.944460	39.423099
80	236	12.101263	107	139.840817	34.948615

81 rows × 5 columns

In [83]:

```
cars_MPG = data1['MPG']
cars_MPG
```

Out[83]:

```
0     53.700681
1     50.013401
2     50.013401
3     45.696322
4     50.504232
        ...
76    36.900000
77    19.197888
78    34.000000
79    19.833733
80    12.101263
Name: MPG, Length: 81, dtype: float64
```

In [84]:

```
cars_MPG.mean()
```

Out[84]:

```
34.422075728024666
```

In [85]:

```
cars_MPG.std()
```

Out[85]:

```
9.131444731795982
```

In [81]:

```
from scipy import stats
```

In [86]:

```
stats.norm.cdf(38,34.42,9.13)
```

Out[86]:

```
0.6525129749869594
```

In [88]:

```
1 - 0.65
```

Out[88]:

```
0.35
```

In [89]:

```
stats.norm.cdf(40,34.42,9.13)
```

Out[89]:

```
0.7294571279557076
```

In [90]:

```
stats.norm.cdf(50,34.42,9.13) - stats.norm.cdf(20,34.42,9.13)
```

Out[90]:

```
0.8989177824549222
```

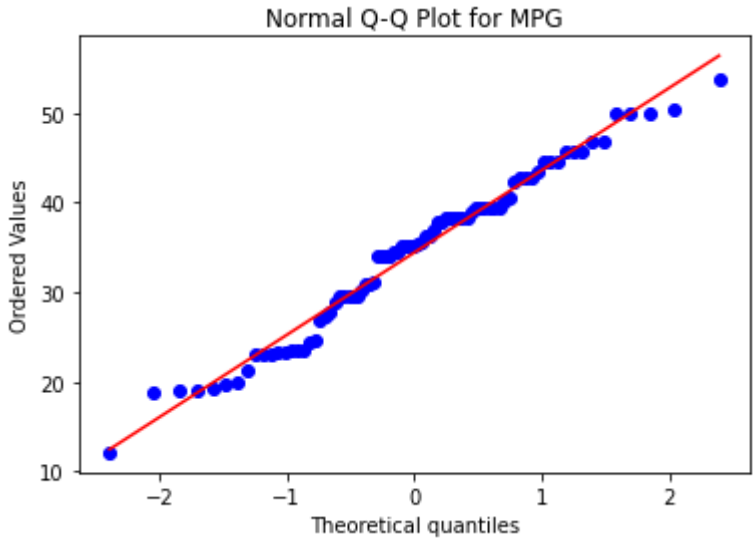
Check whether the MPG of Cars follows Normal Distribution:

In [3]:

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

In [107]:

```
stats.probplot(cars_MPG,dist = 'norm',plot = plt,)
plt.title('Normal Q-Q Plot for MPG')
plt.show()
```



In [98]:

```
data2 = pd.read_csv('wc-at.csv')
data2
```

Out[98]:

	Waist	AT
0	74.75	25.72
1	72.60	25.89
2	81.80	42.60
3	83.95	42.80
4	74.65	29.84
...	...	...
104	100.10	124.00
105	93.30	62.20
106	101.80	133.00
107	107.90	208.00
108	108.50	208.00

109 rows × 2 columns

In [104]:

```
waist_data = data2['Waist']
waist_data
```

Out[104]:

```
0       74.75
1       72.60
2       81.80
3       83.95
4       74.65
        ...
104    100.10
105     93.30
106    101.80
107    107.90
108    108.50
Name: Waist, Length: 109, dtype: float64
```

In [110]:

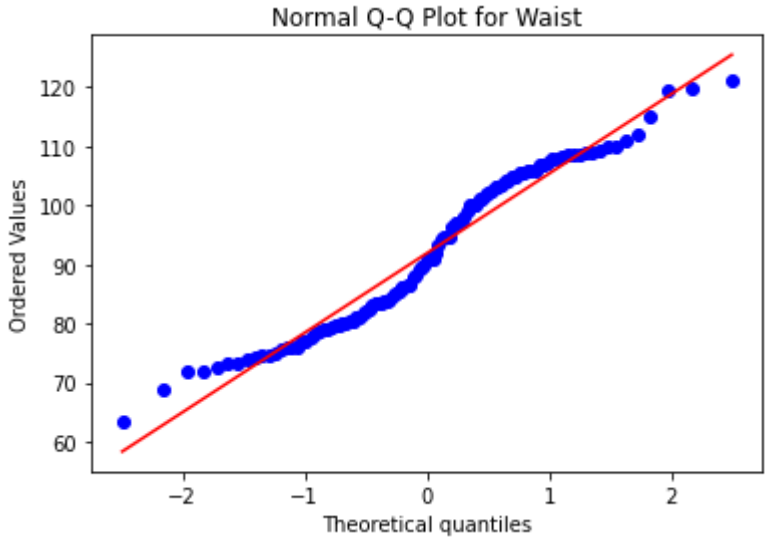
```
AT_data = data2['AT']
AT_data
```

Out[110]:

```
0       25.72
1       25.89
2       42.60
3       42.80
4       29.84
        ...
104    124.00
105     62.20
106    133.00
107    208.00
108    208.00
Name: AT, Length: 109, dtype: float64
```

In [108]:

```
stats.probplot(waist_data,dist = 'norm',plot = plt,)
plt.title('Normal Q-Q Plot for Waist')
plt.show()
```



In [111]:

```
stats.probplot(AT_data,dist = 'norm',plot = plt,)
plt.title('Normal Q-Q Plot for AT')
plt.show()
```