```
#importing
from scipy import stats
import seaborn as sns
import numpy as np
import matplotlib.pyplot as plt
import statsmodels.api as sm
```

```
/usr/local/lib/python3.7/dist-packages/statsmodels/tools/_testing.py:19: Futur
  import pandas.util.testing as tm
```

```
# gather some data
data =[ 0.04177737,  0.97977259,  1.19684675,  0.75969411,  0.2772351 ,
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        0.21167461,  0.87106215, -0.56663286,  0.3702523 ,  0.72724427,
        0.41126015,  0.33358864,  0.72878097,  0.69929305,  0.72581333,
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        0.16538052, -0.43575904,  1.62784202,  0.98340417,  0.90482144,
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       -0.8699551 ,  1.60196517,  1.00140898,  1.48233878, -0.37088602,
       -0.0954339 ,  1.2969551 ,  0.0457524 , -0.06486335,  0.43257115,
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        0.9571359 ,  0.38785662,  0.41390929, -1.10391874, -0.41368798,
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```

```
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```

```
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        0.8233865 ,  1.20263091,  0.49206124,  0.34548617,  1.58287164]
```
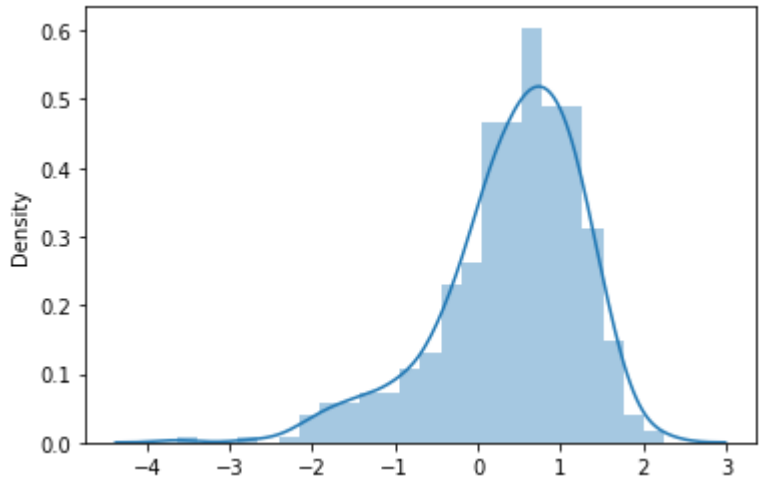

```
x = np.array(data)
```

```
sns.distplot(x)
```

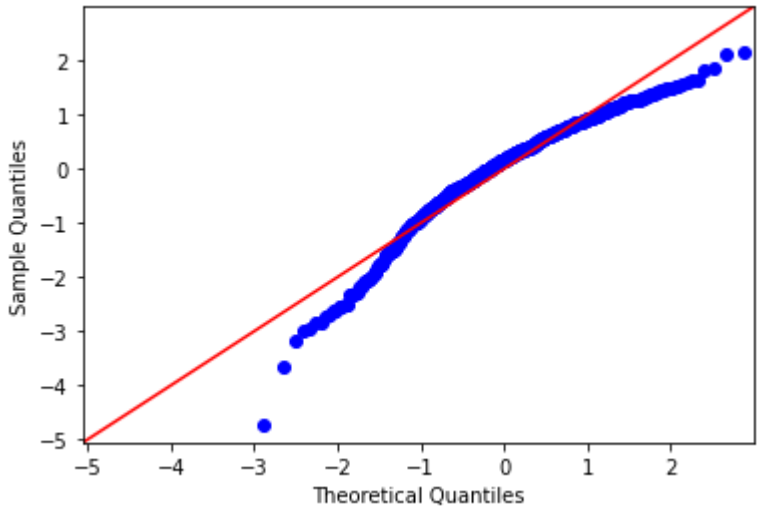
```
/usr/local/lib/python3.7/dist-packages/seaborn/distributions.py:2619: FutureWa
  warnings.warn(msg, FutureWarning)
<matplotlib.axes._subplots.AxesSubplot at 0x7f5eefdfb710>
```




```
#Z-score
i=100
xi= x[i]
print(xi)

print ("zscore:", (xi-np.mean(x))/np.std(x))
```

```
-1.59860382
zscore: -2.341243992536608
```

```
# qq plot of x vs normal
sm.qqplot(x, stats.norm, fit=True, line="45")
```

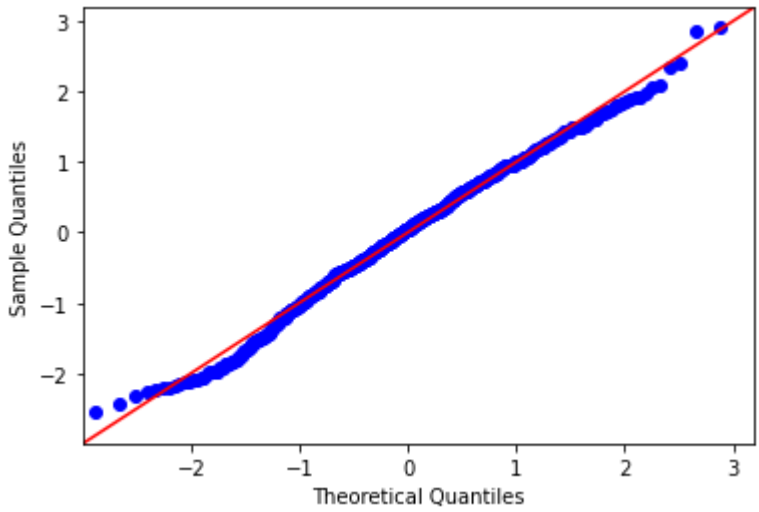


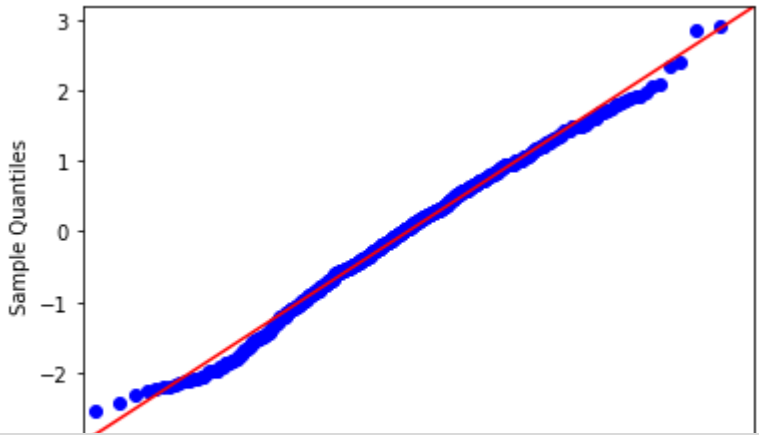

```
np.min(x)
```

```
-3.63123097
```

```
# box cox transform
x1 = x + 3.7
xt, l = stats.boxcox(x1,); # returns x_trasnfomred and lambda
print("lambda :" + str(l))

# check if xt is gaussian or not using QQ-Plot
sm.qqplot(xt, stats.norm, fit=True, line="45")
```

```
lambda :2.2233087629443724
```





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