

In [1]:

```
import pandas as pd
import numpy as np
from sklearn.model_selection import train_test_split
import matplotlib.pyplot as plt
tou = 0.8
X_train = np.array(list(range(3,33))+[3.2,4.2])
X_train

import warnings
warnings.filterwarnings('ignore')
```

In [2]:

```
# Increase the dimensionality useful while plotting graphs
X_train = X_train[:,np.newaxis]
X_train
```

Out[2]:

```
array([[ 3. ],
       [ 4. ],
       [ 5. ],
       [ 6. ],
       [ 7. ],
       [ 8. ],
       [ 9. ],
       [10. ],
       [11. ],
       [12. ],
       [13. ],
       [14. ],
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       [22. ],
       [23. ],
       [24. ],
       [25. ],
       [26. ],
       [27. ],
       [28. ],
       [29. ],
       [30. ],
       [31. ],
       [32. ],
       [ 3.2],
       [ 4.2]])
```

In [3]:

```
len(X_train)
```

Out[3]:

32

In [4]:

```
y_train = np.array([1,2,1,2,1,1,3,4,5,4,5,6,5,6,7,8,9,10,11,11,12,11,11,12,13,16,17,19,18,3
print(len(y_train))
X_test=np.array([i/10. for i in range(400)])
X_test=X_test[:,np.newaxis]
y_test=[]
X_test
```

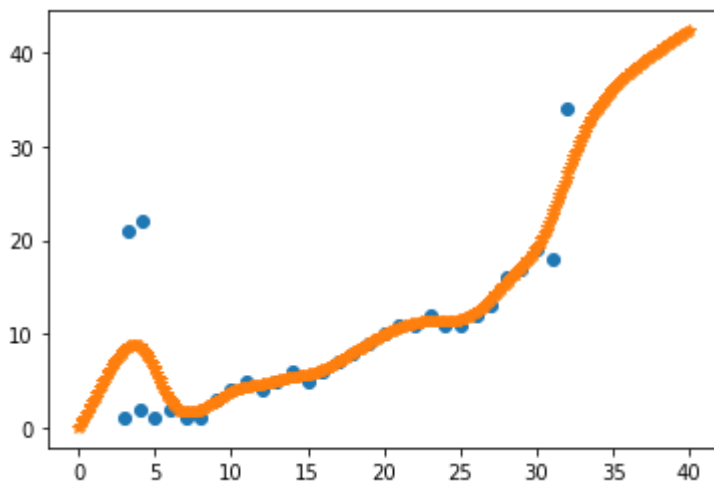
32

In [5]:

```

count = 0
for r in range(len(X_test)):
    try:
        wt = np.exp(-np.sum((X_train-X_test[r])**2,axis=1)/(2*tou)**2)
        w = np.diag(wt)
        fact1 = np.linalg.inv(X_train.T.dot(w).dot(X_train))
        parameter=fact1.dot(X_train.T).dot(w).dot(y_train)
        prediction=X_test[r].dot(parameter)
        y_test.append(prediction)
        count+=1
    except:
        pass
y_test=np.array(y_test)
plt.plot(X_train.squeeze(), y_train,'o')
plt.plot(X_test.squeeze(), y_test,'*')
plt.show()
y_test

```



Out[5]:

```

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```

```

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In []:

