In [1]:
```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
from sklearn import linear_model
```

In [2]:
```
df=pd.read_csv("D:\Python\LinearRegression\Price.csv")
df
```

Out[2]:

	price(Lakhs)	total_sqft
0	39.07	1056.0
1	120.00	2600.0
2	62.00	1440.0
3	95.00	1521.0
4	51.00	1200.0
...	...	...
404	82.00	1175.0
405	165.00	1000.0
406	125.00	1200.0
407	410.00	2390.0
408	2200.00	12000.0

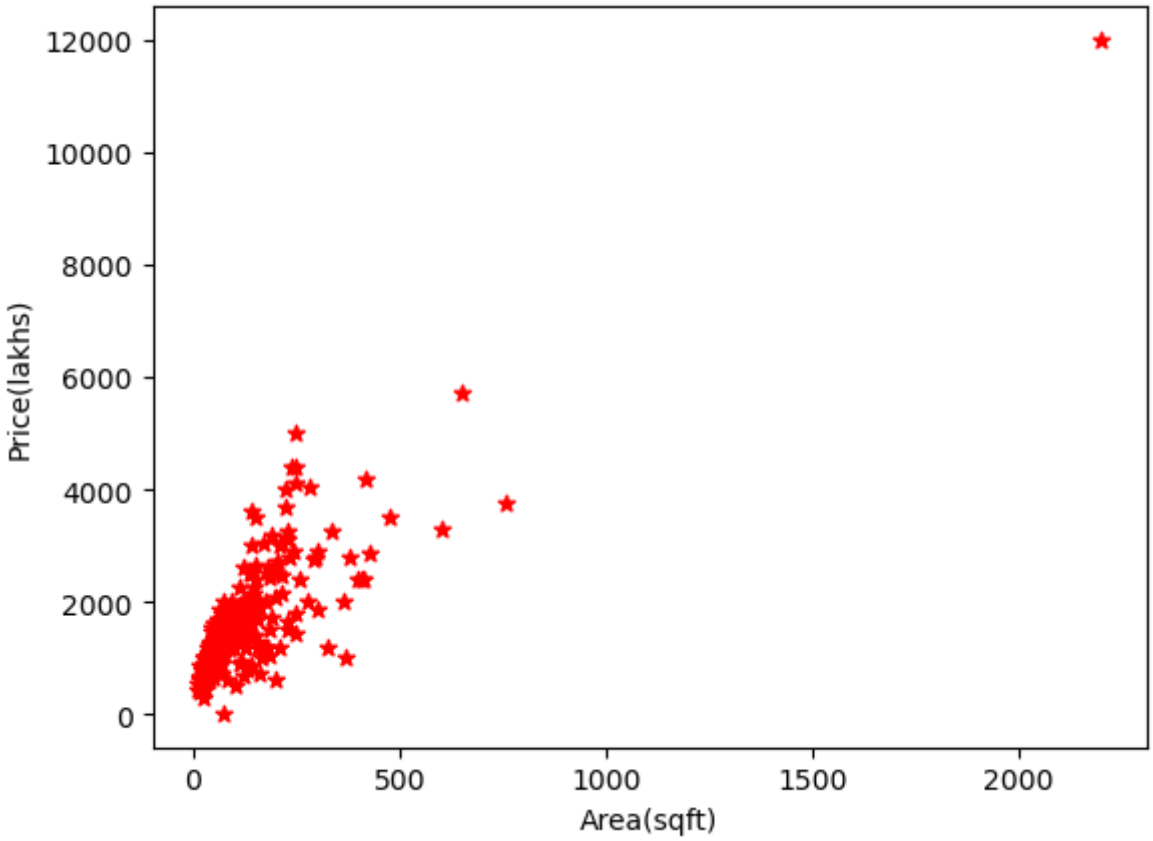
409 rows × 2 columns

In [3]:
```
df.isna().sum()
```

Out[3]:
```
price(Lakhs)    0
total_sqft      0
dtype: int64
```

In [7]:
```
plt.xlabel("Area(sqft)")
plt.ylabel("Price(lakhs)")
plt.scatter(df['price(Lakhs)'],df.total_sqft,color='red',marker='*')
```

Out[7]:
```
<matplotlib.collections.PathCollection at 0x20d42b942b0>
```



In [5]:
```
reg=linear_model.LinearRegression()
```

In [9]:
```
from sklearn.model_selection import train_test_split
X_train,X_test,y_train,y_test=train_test_split(df[['total_sqft']],df[['price(Lakhs
len(X_train)
```

Out[9]:
```
306
```

In [ ]:
```

```

In [10]:
```
reg.fit(X_train,y_train)
```

Out[10]:
```
LinearRegression()
```

In [12]:
```
reg.predict(X_test)
```

Out[12]:
```
array([[ 4.84661127e+01],
       [ 8.34752913e+01],
       [ 7.46897180e+01],
       [ 1.03309389e+02],
       [ 1.23809060e+02],
       [ 8.00143079e+01],
       [ 1.61081189e+02],
       [ 1.42178895e+02],
       [ 6.27093907e+01],
       [ 2.59719217e+02],
       [ 1.34569340e+01],
       [ 1.55623485e+02],
       [ 1.40581518e+02],
       [ 6.75015216e+01],
       [ 8.33421766e+01],
       [ 4.00798836e+01],
       [ 1.18883814e+02],
       [ 5.00634897e+01],
       [ 1.02643815e+02],
       [ 2.41061139e+01],
       [-1.31660155e+01],
       [ 8.10792259e+01],
       [ 1.76655615e+02],
       [ 2.79686430e+02],
       [ 6.67028331e+01],
       [ 1.74525779e+02],
       [ 1.45459269e-01],
       [ 9.53225039e+01],
       [ 1.01179553e+02],
       [ 7.26929968e+01],
       [ 1.03309389e+02],
       [ 3.86178228e+02],
       [ 1.11961847e+02],
       [ 7.73520130e+01],
       [ 7.94818489e+01],
       [ 6.67028331e+01],
       [ 2.53063480e+02],
       [ 1.41513321e+02],
       [ 1.41225078e+01],
       [ 6.76346364e+01],
       [ 6.67028331e+01],
       [ 9.33257827e+01],
       [ 9.66536514e+01],
       [ 6.93651281e+01],
       [ 6.67028331e+01],
       [ 5.55211943e+01],
       [ 1.46571682e+02],
       [ 5.00634897e+01],
       [ 4.00798836e+01],
       [ 5.07290634e+01],
       [ 1.07702175e+02],
       [ 5.91152925e+01],
       [ 7.94818489e+01],
       [-2.24840478e+01],
       [ 1.29266765e+02],
       [ 2.79020856e+02],
       [ 7.73520130e+01],
       [ 3.07618512e+01],
       [ 6.67028331e+01],
       [ 4.34077523e+01],
       [ 1.21279880e+02],
       [ 4.67356210e+01],
       [ 6.23100465e+01],
       [ 1.50032665e+02],
```

```
       [ 6.65719198e+02],
       [ 4.80667685e+01],
       [ 6.67028331e+01],
       [ 1.11961847e+02],
       [ 1.19948732e+02],
       [ 5.33913584e+01],
       [ 9.17284057e+01],
       [ 9.99815201e+01],
       [ 6.67028331e+01],
       [ 8.66700453e+01],
       [ 4.00798836e+01],
       [ 4.67356210e+01],
       [ 4.07454573e+01],
       [ 7.76182424e+01],
       [ 4.00798836e+01],
       [ 1.10608686e+01],
       [ 3.34241462e+01],
       [-2.64774903e+01],
       [ 3.99489702e+02],
       [ 1.32328404e+02],
       [ 1.52828075e+02],
       [ 2.41216267e+02],
       [ 5.33913584e+01],
       [-9.17257307e+00],
       [ 8.80011928e+01],
       [-5.17913064e+00],
       [ 8.65369305e+01],
       [ 4.80667685e+01],
       [ 1.37919223e+02],
       [ 7.36248000e+01],
       [ 1.13292995e+02],
       [ 1.11296274e+02],
       [ 6.67028331e+01],
       [ 6.40405382e+01],
       [ 4.23428343e+01],
       [ 1.50298895e+02],
       [ 2.39752005e+02],
       [ 4.00798836e+01],
       [ 1.64542173e+02]])
```

In [13]:
```
reg.score(X_test,y_test)
```

Out[13]:
```
0.6023871135663408
```

In [17]:
```
y_pred=reg.predict(X_test)
y_pred
```

Out[17]:
```
array([[ 4.84661127e+01],
       [ 8.34752913e+01],
       [ 7.46897180e+01],
       [ 1.03309389e+02],
       [ 1.23809060e+02],
       [ 8.00143079e+01],
       [ 1.61081189e+02],
       [ 1.42178895e+02],
       [ 6.27093907e+01],
       [ 2.59719217e+02],
       [ 1.34569340e+01],
       [ 1.55623485e+02],
       [ 1.40581518e+02],
       [ 6.75015216e+01],
       [ 8.33421766e+01],
       [ 4.00798836e+01],
       [ 1.18883814e+02],
       [ 5.00634897e+01],
       [ 1.02643815e+02],
       [ 2.41061139e+01],
       [-1.31660155e+01],
       [ 8.10792259e+01],
       [ 1.76655615e+02],
       [ 2.79686430e+02],
       [ 6.67028331e+01],
       [ 1.74525779e+02],
       [ 1.45459269e-01],
       [ 9.53225039e+01],
       [ 1.01179553e+02],
       [ 7.26929968e+01],
       [ 1.03309389e+02],
       [ 3.86178228e+02],
       [ 1.11961847e+02],
       [ 7.73520130e+01],
       [ 7.94818489e+01],
       [ 6.67028331e+01],
       [ 2.53063480e+02],
       [ 1.41513321e+02],
       [ 1.41225078e+01],
       [ 6.76346364e+01],
       [ 6.67028331e+01],
       [ 9.33257827e+01],
       [ 9.66536514e+01],
       [ 6.93651281e+01],
       [ 6.67028331e+01],
       [ 5.55211943e+01],
       [ 1.46571682e+02],
       [ 5.00634897e+01],
       [ 4.00798836e+01],
       [ 5.07290634e+01],
       [ 1.07702175e+02],
       [ 5.91152925e+01],
       [ 7.94818489e+01],
       [-2.24840478e+01],
       [ 1.29266765e+02],
       [ 2.79020856e+02],
       [ 7.73520130e+01],
       [ 3.07618512e+01],
       [ 6.67028331e+01],
       [ 4.34077523e+01],
       [ 1.21279880e+02],
       [ 4.67356210e+01],
       [ 6.23100465e+01],
       [ 1.50032665e+02],
```

```
[ 6.65719198e+02],
[ 4.80667685e+01],
[ 6.67028331e+01],
[ 1.11961847e+02],
[ 1.19948732e+02],
[ 5.33913584e+01],
[ 9.17284057e+01],
[ 9.99815201e+01],
[ 6.67028331e+01],
[ 8.66700453e+01],
[ 4.00798836e+01],
[ 4.67356210e+01],
[ 4.07454573e+01],
[ 7.76182424e+01],
[ 4.00798836e+01],
[ 1.10608686e+01],
[ 3.34241462e+01],
[-2.64774903e+01],
[ 3.99489702e+02],
[ 1.32328404e+02],
[ 1.52828075e+02],
[ 2.41216267e+02],
[ 5.33913584e+01],
[-9.17257307e+00],
[ 8.80011928e+01],
[-5.17913064e+00],
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[ 1.11296274e+02],
[ 6.67028331e+01],
[ 6.40405382e+01],
[ 4.23428343e+01],
[ 1.50298895e+02],
[ 2.39752005e+02],
[ 4.00798836e+01],
[ 1.64542173e+02]])
```