In [91]:

```
import numpy as np
import pandas as pd
from matplotlib import pyplot as plt
from sklearn.model_selection import train_test_split
from sklearn.linear_model import LinearRegression
```

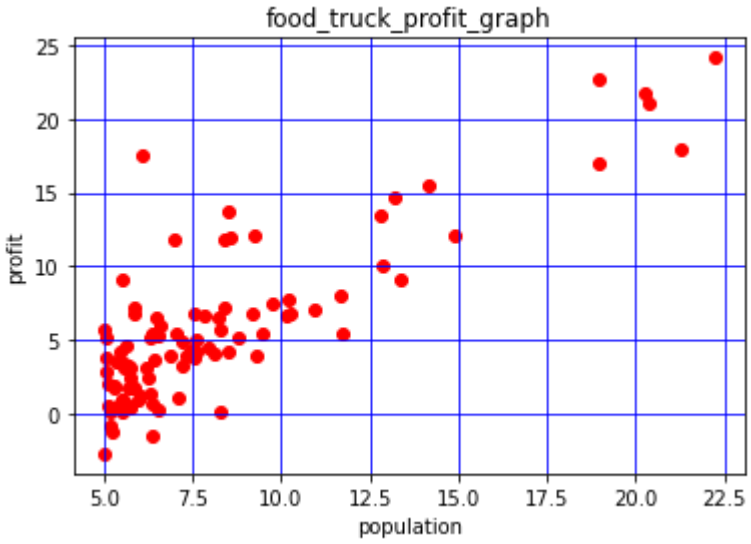
In [92]:

```
data=pd.read_csv("labds.txt")
print(data.shape)
```

```
(97, 2)
```

In [93]:

```
x=data[['population']].values
y=data[['profit']].values
%matplotlib inline
plt.scatter(x,y,c="r",label="scatter_data")
plt.xlabel("population")
plt.ylabel("profit")
plt.title('food_truck_profit_graph')
plt.grid(True,color='b')
plt.show()
```



In [94]:

```
k=LinearRegression()
k.fit(x,y)
```

Out[94]:

```
LinearRegression()
```

In [95]:

```
print('c value:',k.intercept_)
```

```
c value: [-3.89578088]
```

In [96]:

```
print('m value:',k.coef_)
```

```
m value: [[1.19303364]]
```

In [97]:

```
y_pred=k.predict(x)
plt.scatter(x,y,color="red")
plt.plot(x,y_pred,color="blue")
plt.title('salary vs experience(Training set)')
plt.xlabel('years of experience')
plt.ylabel('salary')
plt.show()
```

In [98]:

```
from sklearn.metrics import mean_squared_error
rmse=mean_squared_error(y,y_pred)
rmse
```

Out[98]:

```
8.953942751950358
```

In [99]:

```
from sklearn.metrics import r2_score
r_sq=r2_score(y,y_pred)
r_sq
```

Out[99]:

```
0.7020315537841397
```

In [100]:

```
n1=4.5
n2=6.5
print("profit from 45000 people city is",k.predict([[n1]])*10000,"$")
print("profit from 65000 people city is",k.predict([[n2]])*10000,"$")
```

```
profit from 45000 people city is [[14728.70520541]] $
profit from 65000 people city is [[38589.37808921]] $
```

Develop a Linear Regression model for the given

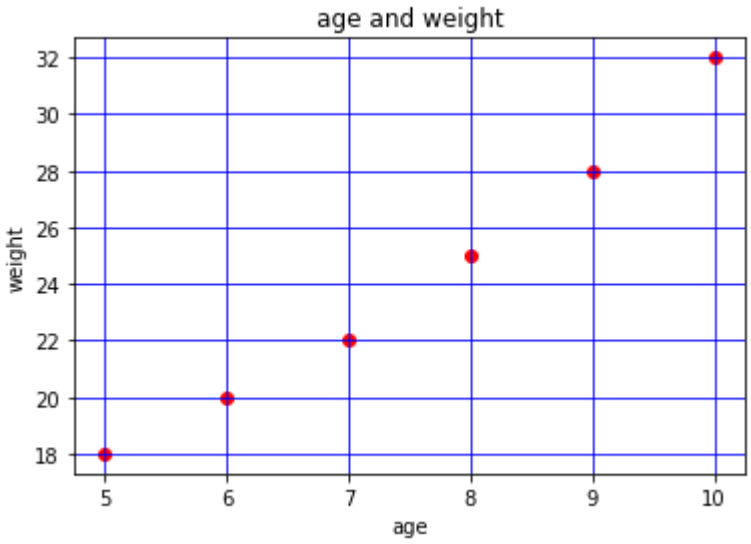
age and weight data. x=np.array([5,6,7,8,9,10]) #age y=np.array([18,20,22,25,28,32]) #weight

In [101]:

```
x=np.array([[5,6,7,8,9,10]])
y=np.array([[18,20,22,25,28,32]])
```

In [102]:

```
plt.scatter(x,y,c="r",label="scatter_data")
plt.xlabel("age")
plt.ylabel("weight")
plt.title('age and weight')
plt.grid(True,color='b')
plt.show()
```



In [103]:

```
k=LinearRegression()
k.fit(x,y)
```

Out[103]:

```
LinearRegression()
```

In [107]:

```
print('c value:',k.intercept_)
print(y_pred)
```

```
c value: [18. 20. 22. 25. 28. 32.]
[[18. 20. 22. 25. 28. 32.]]
```

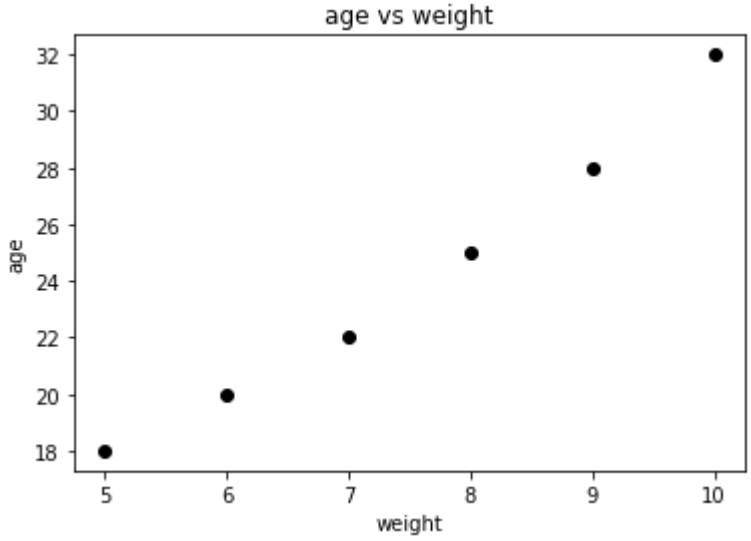
In [108]:

```
print('m value:',k.coef_)
```

```
m value: [[0. 0. 0. 0. 0. 0.]
 [0. 0. 0. 0. 0. 0.]
 [0. 0. 0. 0. 0. 0.]
 [0. 0. 0. 0. 0. 0.]
 [0. 0. 0. 0. 0. 0.]
 [0. 0. 0. 0. 0. 0.]]
```

In [109]:

```
y_pred=k.predict(x)
plt.scatter(x,y,color="black")
plt.plot(x,y_pred,color="red")
plt.title('age vs weight')
plt.xlabel('weight')
plt.ylabel('age')
plt.show()
```



In [110]:

```
from sklearn.metrics import mean_squared_error
rmse=mean_squared_error(y,y_pred)
rmse
```

Out[110]:

```
0.0
```

In [111]:

```
from sklearn.metrics import r2_score
r_sq=r2_score(y,y_pred)
r_sq
```

```
C:\ProgramData\Anaconda3\lib\site-packages\sklearn\metrics\_regression.py:
682: UndefinedMetricWarning: R^2 score is not well-defined with less than
two samples.
  warnings.warn(msg, UndefinedMetricWarning)
```

Out[111]:

```
nan
```

In [ ]:

```

```

In [ ]:

```

```