In [1]:

```
#Problem 1B
import numpy as np
X=np.random.randint(low=1, high=100, size=4)
y=6*X + np.random.randint(low=1, high=100, size=4)
m=len(y)
b1 = []
p= np.ones((m, 1))
X = np.reshape(X, (m, 1))
X = np.append(p, X, axis=1)
X_transpose = X.T
b1 = np.linalg.inv(X_transpose.dot(X))
b1 = b1.dot(X_transpose)
b1 = b1.dot(y)
print(b1)
```

```
[74.50970345  5.72067161]
```

In [2]:

```
#Problem 1C
import numpy as np
import csv
with open('D:/CMU_Sem1_books_notes/AI_Machine_Learning/24787-Assignment1/data.csv', 'r') as
csv_file:
    csv_reader = csv.reader(csv_file)
    data = []
    for row in csv_reader:
        if len(row) !=0:
            data = data + [row]
csv_file.close()
data = np.array(data)
data= np.delete(data, (0), axis=0)
X=data[:,0]
y=data[:,1]
m=len(X)
b1 = []
p= np.ones((m, 1))
X = np.reshape(X, (m, 1))
X = np.append(p, X, axis=1)
X=np.array(X,dtype=float)
y=np.array(y,dtype=float)
X_transpose = X.T
b1= np.linalg.inv(X_transpose.dot(X))
b1 = b1.dot(X_transpose)
b1 = b1.dot(y)
print(b1)
```

```
[ 4.08065714 -0.44236914]
```

In [ ]:

```

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