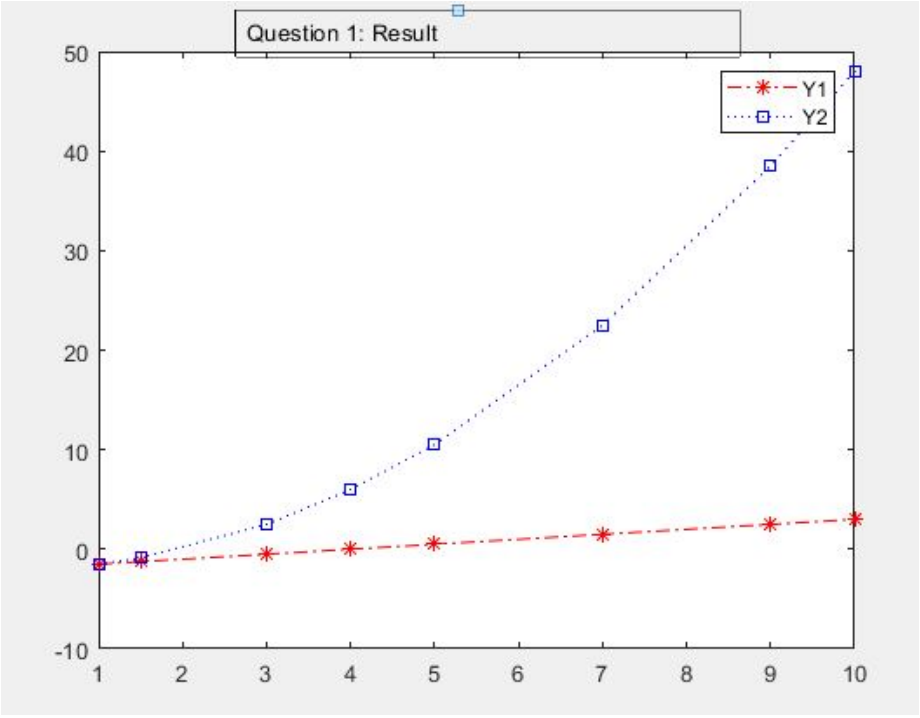
Econ 512 HW 1

Kalyani Padmakumar

Sept 5, 2018

1 Question 1: Code and Result

```
Question 1- Code
clear
X = [1,1.5,3,4,5,7,9,10]
Y1 = -2 + X.*0.5
Y2 = -2 + (X.^2)*0.5
plot (X,Y1,'-.r*')
hold on
plot(X,Y2,':bs')
legend('Y1','Y2')
```



2 Question 2: Code and Result

```
Question 2 - Code
clear
X = (linspace(-10,20,200))'
SUM = sum(X)
```

```
SUM =

        1000
```

3 Question 3: Code and Result

```
Question 3 - Code
clear
A = [2 4 6;
1 7 5;
3 12 4]
b = [-2,3,10]'
C = (A')*b
D = inv(A'*A)*b
S = sum(A,2)
E = S'*b
F = A
F(2,:) = []
F(:,3) = []
x = inv(A)*b
```

```
C =

    29
   133
    43

>> D

D =

   -3.2505
    0.3961
    0.8037
```

```
E =

    205

>> F

F =

     2     4
     3    12

>> x

x =

   -0.1622
    1.2432
   -1.1081
```

4 Question 4: Code and Result

```
Question 4 - Code
B = blkdiag(A,A,A,A,A)
```

```
B =

     2     4     6     0     0     0     0     0     0     0     0     0     0     0     0
     1     7     5     0     0     0     0     0     0     0     0     0     0     0     0
     3    12     4     0     0     0     0     0     0     0     0     0     0     0     0
     0     0     0     2     4     6     0     0     0     0     0     0     0     0     0
     0     0     0     1     7     5     0     0     0     0     0     0     0     0     0
     0     0     0     3    12     4     0     0     0     0     0     0     0     0     0
     0     0     0     0     0     0     2     4     6     0     0     0     0     0     0
     0     0     0     0     0     0     1     7     5     0     0     0     0     0     0
     0     0     0     0     0     0     3    12     4     0     0     0     0     0     0
     0     0     0     0     0     0     0     0     0     2     4     6     0     0     0
     0     0     0     0     0     0     0     0     0     1     7     5     0     0     0
     0     0     0     0     0     0     0     0     0     3    12     4     0     0     0
     0     0     0     0     0     0     0     0     0     0     0     0     2     4     6
     0     0     0     0     0     0     0     0     0     0     0     0     1     7     5
     0     0     0     0     0     0     0     0     0     0     0     0     3    12     4
```

5 Question 5: Code and Result

```
Question 5 - Code
clear
A = normrnd(10,5,[5,3])
A(A<10) = [0]
A(A>=10) = [1]
```

```
A =

     1     0     1
     0     1     1
     1     1     0
     1     1     1
     0     0     0
```

6 Question 6: Code and Result

```
ds = dataset('XLSFile','Datahw1.xlsx')
fitlm(ds,'prod~export+RD+cap')
```

```
ans =


Linear regression model:
    prod ~ 1 + export + RD + cap

Estimated Coefficients:
                   Estimate       SE        tStat       pValue
                   ________    _________    ______    __________

    (Intercept)    0.082548     0.016719    4.9374      8.21e-07
    export          0.11985    0.0063193    18.966    3.7356e-77
    RD              0.13992    0.0085321    16.399    1.0565e-58
    cap            0.029443    0.0017827    16.516    1.7144e-59

Number of observations: 4389, Error degrees of freedom: 4385
Root Mean Squared Error: 0.178
R-squared: 0.353,  Adjusted R-Squared 0.353
F-statistic vs. constant model: 798, p-value = 0
```

Please note that I referred to the web for help with a few commands in this document.