

MAE107 HW6 Problem 3 Starter Script

```
clc
clear
close all

% Import data_test.txt into script; make sure the txt file is located in
% Matlab's current directory or in added path
data = readmatrix('data_test.txt');
x = data(:,1);
y = data(:,2);

% Your code:

% a)
plot(x,y,'o');
hold on;

% b)
n = length(data);
a1 = (n*sum(x.*y)-sum(x)*sum(y))/(n*sum(x.^2)-sum(x)^2)
ybar = sum(y)/n;
xbar = a1*sum(x)/n;
a0 = ybar + xbar

f = a0 + a1*x;
plot(x,f);
legend('data','linear regression')

% c)
sr = sum((y-a0-a1*x).^2);
s = sqrt(sr/(n-2))

% d)
st = sum((y-ybar).^2);
r2 = (st-sr)/st
```

```
a1 =

    10.5233
```

```
a0 =

    0.9550
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```
s =

    18.9054
```

```
r2 =
```

0.7602

