
```
a = [ ...  
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8.81721369e-01  
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2.06735762e+00  
-4.21941514e-01  
3.89263477e+00  
4.09300943e-01  
-5.05967311e-01  
3.18415295e+00  
4.09153094e+00  
5.99081715e-01  
3.00175441e+00  
-8.92236884e-01  
3.47762254e+00  
2.31565957e+00  
4.84242891e+00  
-1.14685189e+00  
9.15356281e-01  
-4.37006646e-01  
3.60229313e+00  
3.01719934e+00  
4.45047474e+00  
3.68711482e+00  
1.67616823e-01  
3.88481663e+00  
1.30458035e+00  
2.94119198e+00  
-4.10491162e-01  
4.27852249e+00  
3.49656316e+00  
4.69914047e+00  
3.09437776e+00  
2.62231653e+00  
-6.10554928e-01  
4.15606384e+00  
1.22838450e+00  
3.63295477e-01  
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3.87908624e+00  
1.54162804e+00  
1.59274164e+00  
1.44639584e+00  
2.94048129e+00  
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-7.75934138e-01  
3.82924050e+00
```

```
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1.38024714e+00
1.36960933e+00
-4.39809329e-01
1.80114112e+00
7.45963345e-01
3.07562547e+00
-5.92683561e-01
3.61395575e+00
3.67606427e+00
4.27431438e+00
1.04619577e+00
4.44475860e+00
3.58926088e+00
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5.03135688e-01
1.74214618e+00
-5.27882686e-01
2.78813886e+00
2.97185217e-01
1.52431020e+00
-1.11439522e+00
1.59114450e+00
3.66149808e+00
3.91320845e+00
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3.93674275e+00
5.79671364e-01
2.55474236e+00
1.77232716e+00
4.08279010e-01
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3.50466914e+00
4.54780895e+00
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3.84620658e+00
-5.35339049e-01
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-7.00939752e-01
-2.40793560e-01
-1.04065355e+00
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4.93903510e+00
3.04830768e+00
4.76245349e-01
4.56591874e+00 ];
b = [ ...
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-9.25305115e-01
-1.47498575e+00
```

-6.11286856e-01
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2.74901558e-01
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-2.28042842e-01
-3.90664199e-01
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9.32163700e-01
-1.21728830e+00
-1.21532981e+00
-1.29308721e+00
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-7.07946097e-02
-2.10357953e-01
-1.35406484e-01
-4.58767989e-01
-1.79646696e+00
-1.90664088e-01
-3.34829323e-01
-1.60236373e+00
-1.31767549e+00
-6.47419085e-01
-7.59603865e-01
-6.09362761e-01
-6.31512117e-01
-5.78531171e-01
-1.53709451e+00
-5.44184333e-01
-1.61375667e+00
-6.02984285e-01
3.24192448e-01
-1.21814386e+00
-1.40958778e+00
-2.04920884e+00
-5.47639543e-01
-1.02088879e+00
-1.21696448e+00
4.29393420e-02

```

-1.95087963e+00
-5.39948017e-01
-1.24130785e+00
-5.96934417e-01
-6.81871324e-01
 5.01991798e-01
-5.69389371e-01
 1.00050225e+00
 2.44992259e-01
-1.97943394e+00
-2.29648571e+00
-6.65623227e-01
-1.30951652e+00
-2.46652220e-01
-7.33517983e-01
-1.42182443e+00
-1.64176082e+00
-1.04107182e+00
 3.26230021e-01
 4.06406975e-01
-1.53204187e+00
-1.42653002e-01
-7.98906514e-01
-4.78657927e-02
-6.02002881e-01
-1.61201110e+00
-9.04410097e-01
-3.21532418e-01
 6.69233494e-01
-1.36008289e+00
-1.18870878e+00
-1.77541296e-01
-1.97732743e+00
-3.76038189e-01
-2.24225080e+00
-1.17447048e+00
-1.86641627e+00
-1.58725492e+00
 4.73068313e-02
-3.78309640e-01
-1.89556472e+00
 1.44099079e-01 ];

```

```

Upper_Bound = 6;
Lower_Bound = -6;
N = 100;
x = linspace(Lower_Bound, Upper_Bound,N);

mean_a = mean(a);
mean_b = mean(b);
std_a = std(a);
std_b = std(b);

a_bar = a - mean_a.*ones(100,1);

```

```
b_bar = b - mean_b.*ones(100,1);

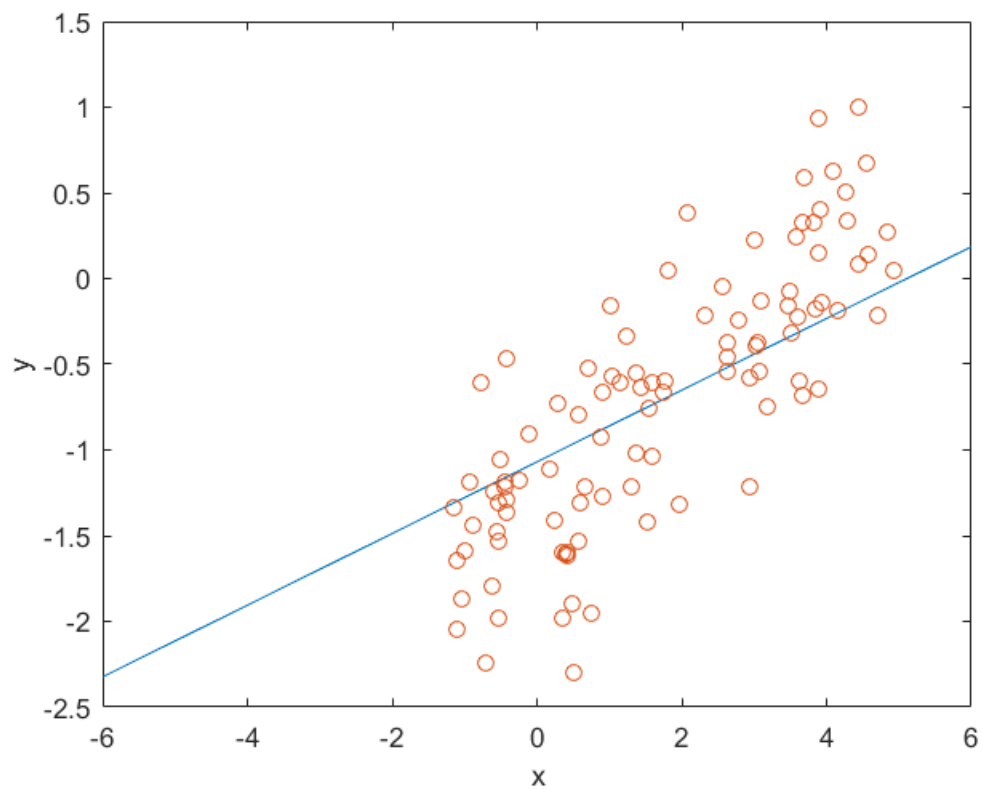
rou = (a_bar'*b_bar)/(norm(a)*norm(b));

std_ratio_diff = std_a/std_b - std_b/std_a;

C2 = (-std_ratio_diff + sqrt(std_ratio_diff^2 + 4*rou^2))/(2*rou);
C1 = mean_b - C2*mean_a;

fx = zeros(N,1);
for ii = 1:N
    fx(ii) = x(ii)*C2+C1;
end

plot(x,fx);
hold on;
scatter(a,b);
xlabel('x');
ylabel('y');
```



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