Solutions to Homework 1: MATLAB Basics

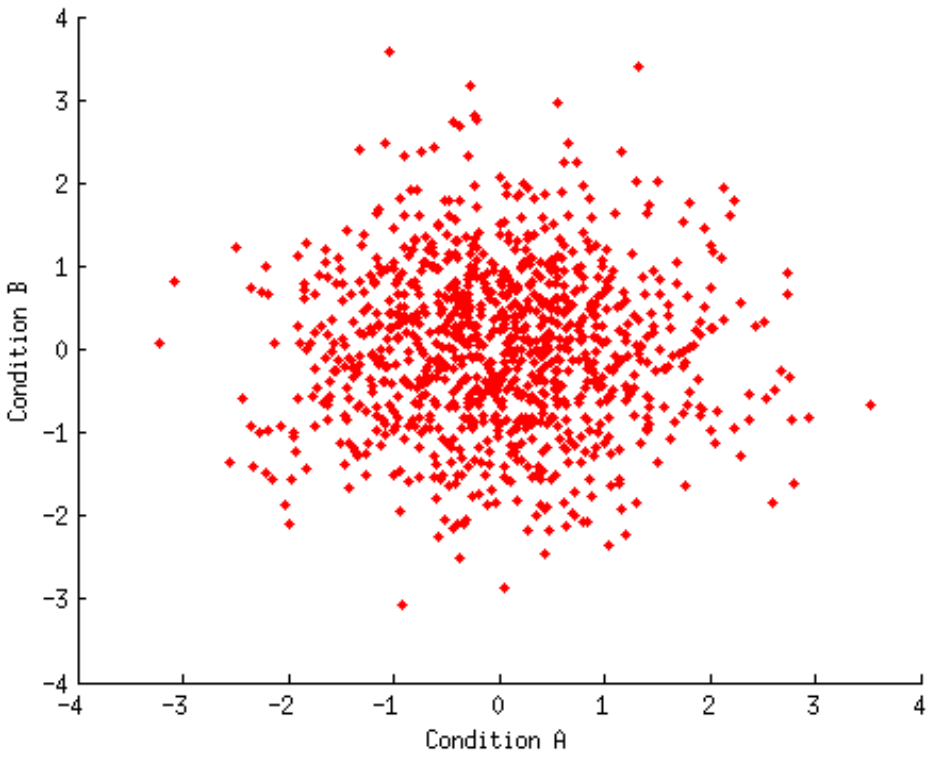
Contents

Problem 0

```
load('Homework1.mat');
```

Problem 1

```
set1 = randn(1,1000);
set2 = randn(1,1000);
figure;
scatter(set1,set2,'r.');
xlabel('Condition A');
ylabel('Condition B');
```



Problem 2

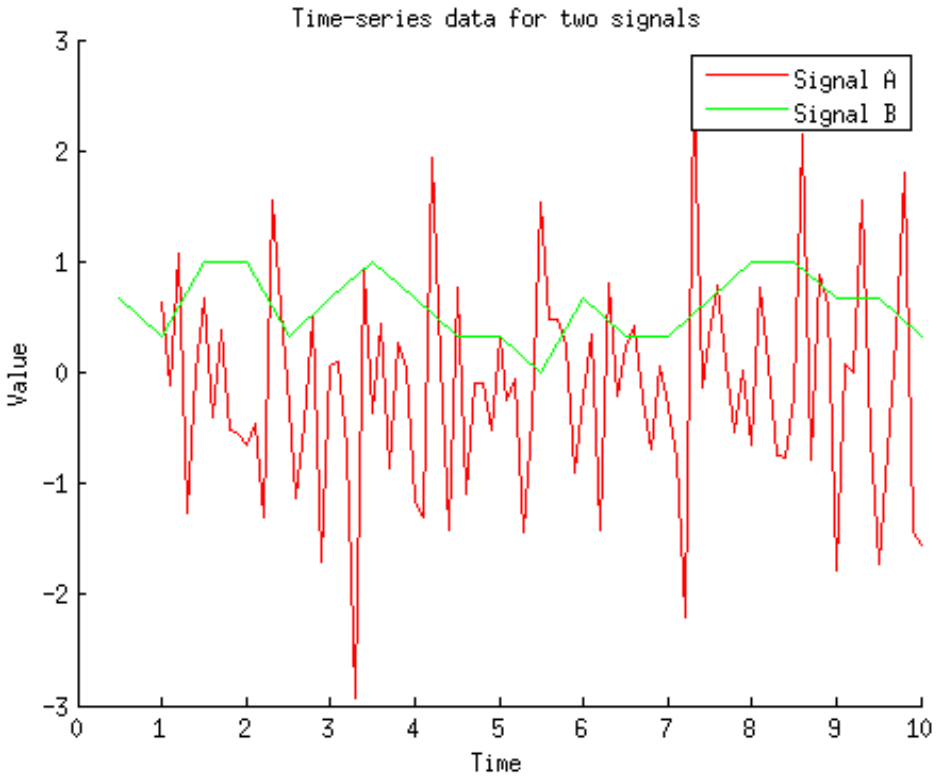
```
result = sum(data1(1,:)) / sum(data1(2,:));
result
```

```
result =

          0.438566552901024
```

Problem 3

```
figure;
hold on;
hA = plot(timeA,valsA,'r-');
hB = plot(timeB,valsB,'g-');
xlabel('Time');
ylabel('Value');
title('Time-series data for two signals');
legend([hA hB],{'Signal A' 'Signal B'});
```



Problem 4

```
x = [3 -1 1.5; 2 0 0; 1 1 1];
x(end+1,:) = 1;
x(1,end) = 0;
result = x(:,end)';
result
```

```
result =

     0     0     1     1
```

Problem 5

```
result = checkpositive([4 1 1; -1 0 0; 0 0 0; .1 .2 .1]);
result
```

```
Row 1: yes
Row 2: no
Row 3: no
Row 4: yes

result =

     1     0     0     1
```

Published with MATLAB® R2012b

```
function f = checkpositive(x)

% function f = checkpositive(x)
%
% <x> is a 2D matrix
%
% Determine whether the numbers in each row are all positive.
% We return a row vector where the nth element is 1 if all
% numbers in the nth row are positive and 0 if not.  We
% also report the results to the command window.
%
% Example:
% f = checkpositive([1 2; -1 1]);

% check if elements in each row are all positive
f = all(x > 0,2);

% return as row vector
f = f';

% report results to command window
for p=1:length(f)
  if f(p)==1
    fprintf('Row %d: yes\n',p);
  else
    fprintf('Row %d: no\n',p);
  end
end

```