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Problem Set#0

Returns a row vector

2. a. >> x = randperm(50);

Returns a vector containing a random permutation of integers from 1 to 50 (including 50).

b. >> a = [1,2,3; 4 5 6; 7 8 9];

Returns a 3X3 matrix where the first row has 1 2 3, second row 4 5 6, third row 7 8 9.

>> b = a(2,:);

Access 'a' matrix's 2nd row. b = [4 5 6].

c. >> a = [1,2,3; 4 5 6; 7 8 9];

Returns a 3X3 matrix where the first row has 1 2 3, second row 4 5 6, third row 7 8 9.

>> b = a(:);

Make 9X1 column vector by stacking up columns of a.

d. >> f = randn(5,1);

Returns a 5X1 matrix containing pseudorandom values drawn from the standard normal distribution.

>> g = f(find(f > 0));

Find indices of positive elements of A and copies them into g. g is NX1 matrix containing positive elements of A (N = number of positive elements in A).

e. >> x = zeros(1,6)+0.5;

Creates a 1X6 matrix of zeros and add 0.5.

>> y = 0.5.*ones(1,length(x));

Creates a 1X(length of x's column) matrix of ones and do element-wise multiplication of 0.5 = 1 X 0.5 = 0.5.

>> z = x + y;

Vector addition of x and y. Returns a matrix size of same as x (x and y have the same size) containing the result of vector addition of x and y.

f. >> a = [1:4];

Creates a 1X4 matrix of elements starting from 1 to 4 augmented by 1 for each.

>> b = a([end:-1:1]);

Returns a 1X4 matrix of elements starting from the last element of a to 1 with the stepsize of -1.

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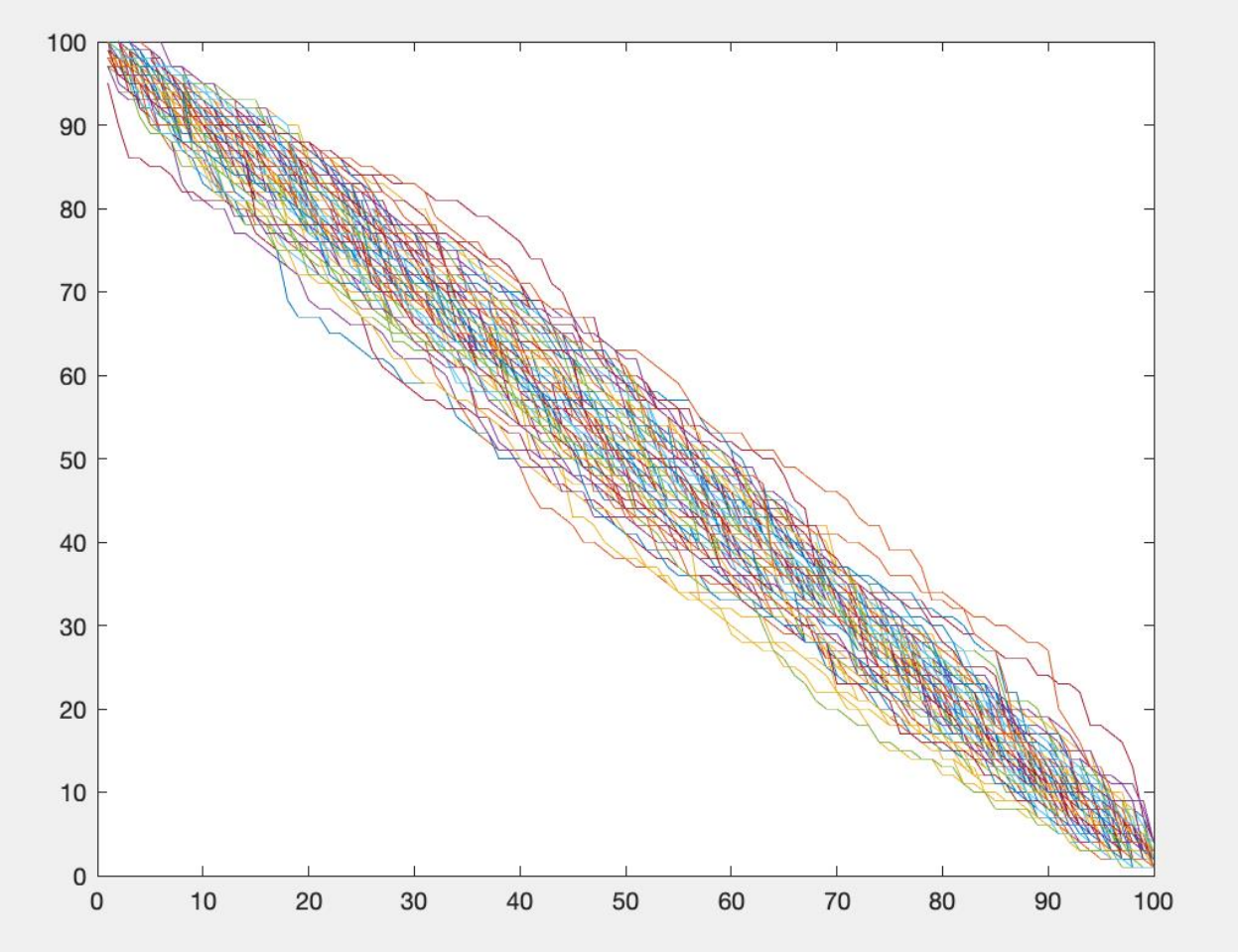
3. a. Use rand to write a function that returns the roll of a six-sided die.
roll = randi(6)

b. Let y be the vector: y = [1 2 3 4 5 6]. Use the reshape command to form a new matrix Z that looks like this: $\boldsymbol{Z}$ = 1 3 5
2 4 6
Z = reshape(y, 2, 3)

c. Use the min and find functions to set x to the minimum value that occurs in Z (above), and set r to the row it occurs in and c to the column it occurs in.
x = min(find(Z))
r = min(Z)
c = min(Z,[],2) [r,c] = find(Z==x)

d. Let v be the vector: v = [2 8 3 2 1 8 1 8]. Set a new variable x to be the number of 8's in the vector v.
x = sum(v(:) == 8)

4. a.



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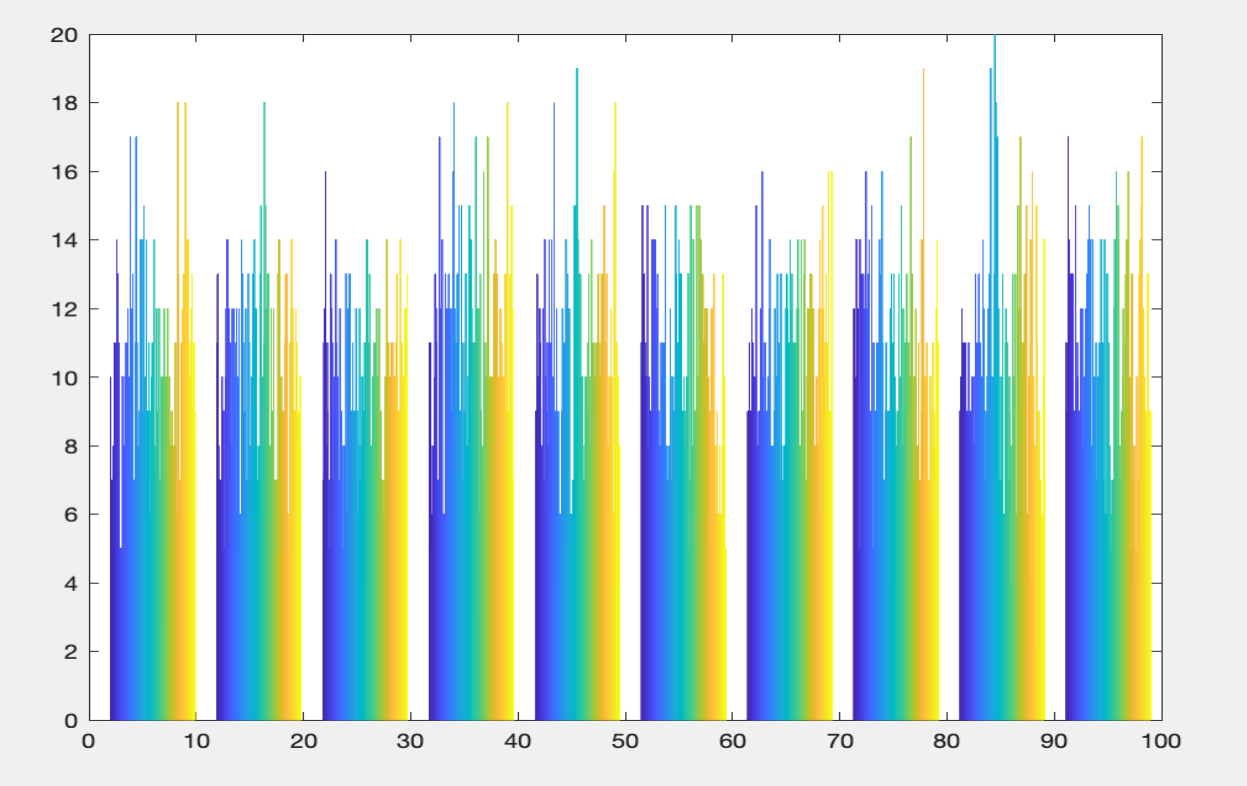
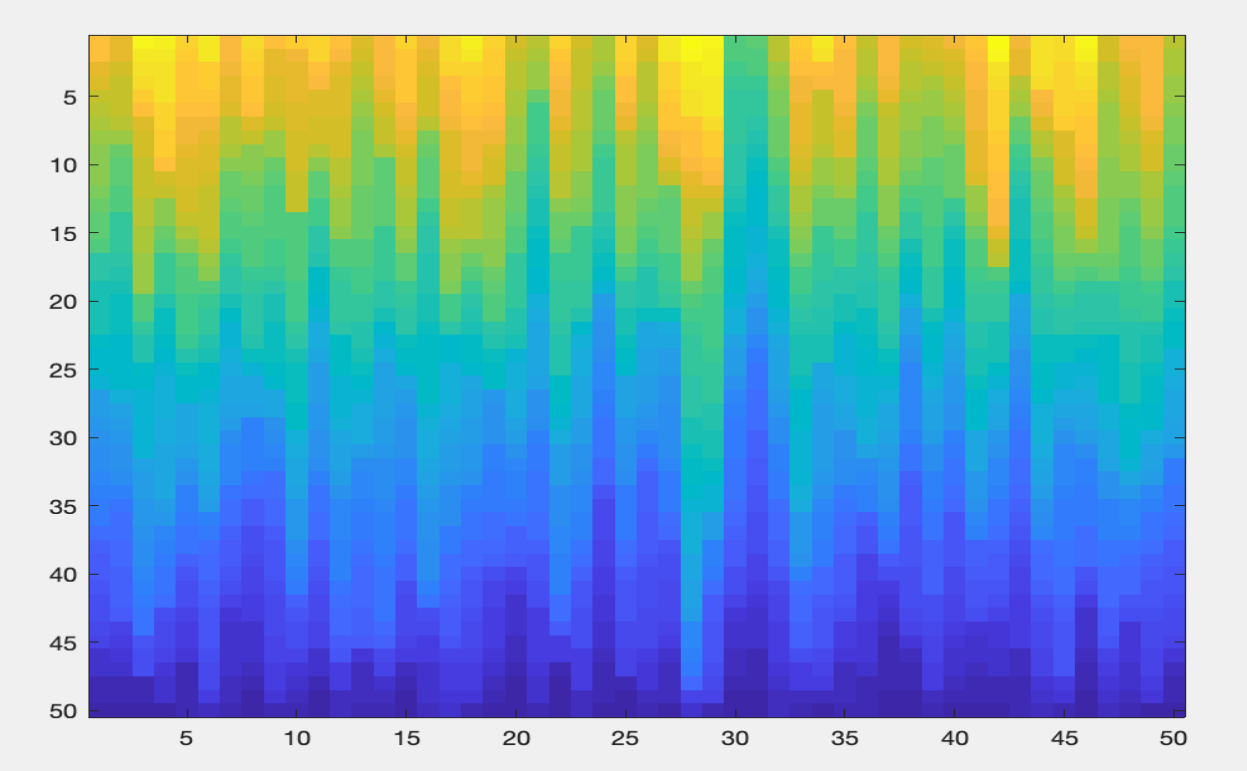
b.



c.



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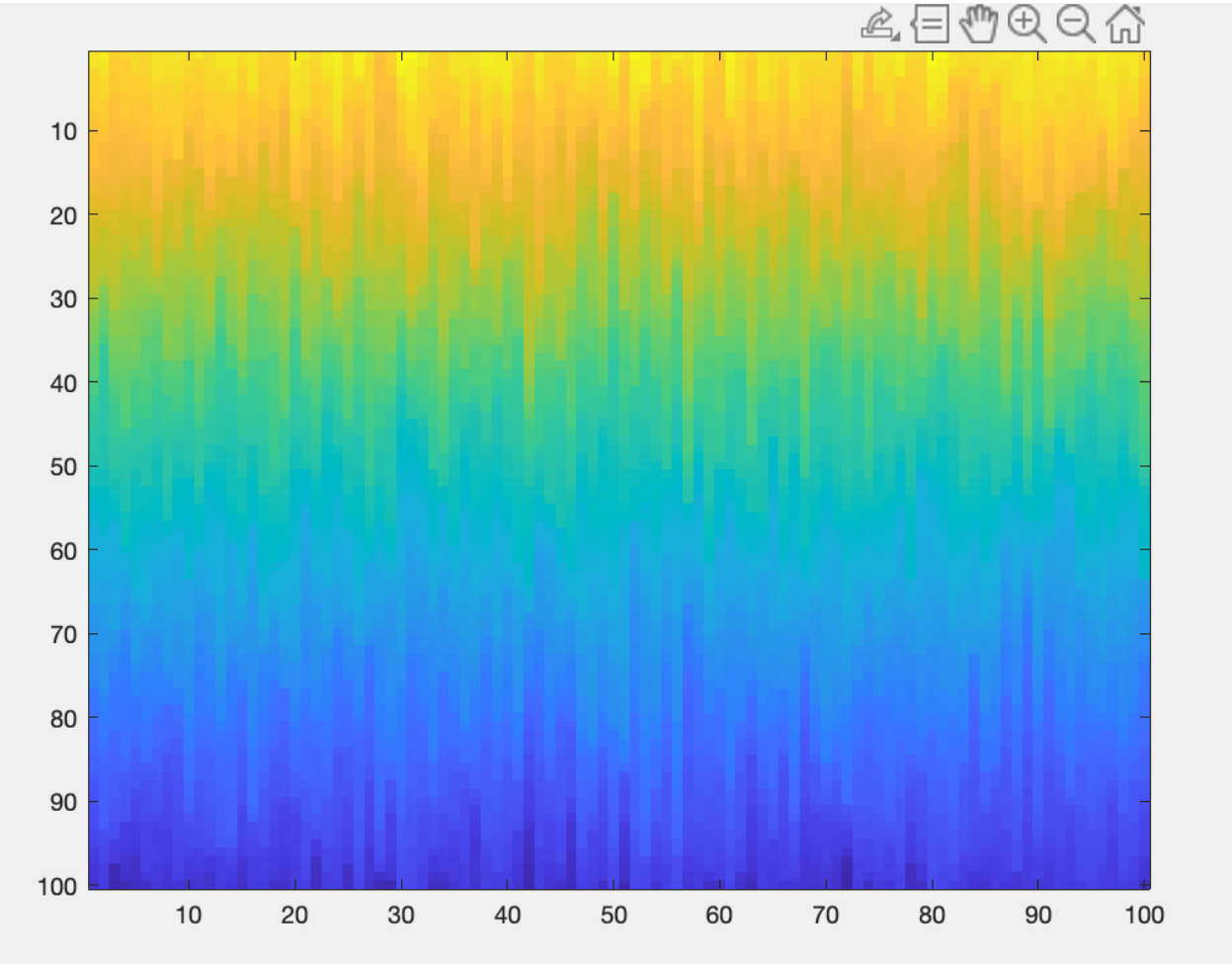
d.



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e.