PNI MATLAB summer bootcamp
Week 2 problem set

1) Create two 3x3 matrices using randi functions.
   a. Horizontally concatenate these two matrices. What is the dimension of the resulting matrix?
   b. Vertically concatenate these two matrices. What is the dimension of the resulting matrix?

2) Generate and name a 1x12 matrix using randi(7,1,12) as random_matrix.
   a. Reshape the above random_matrix into a 2x6 matrix.
   b. Reshape the above random_matrix into a 4x3 matrix.
   c. Reshape the above random_matrix into a 3x3 matrix. Why did you get an error?

3) Write a function which takes radius as input from the user and gives back circumference and area of a circle as output. Name this function as area_and_circumference. Use this function to find the circumference and area of a circle with radius 4.

4) Write a function which takes an array as input from the user and gives back maximum and minimum of that array as output. Name this function as min_max. Generate a random array using randi(7,1,6). Use your min_max function to find the minimum and maximum of this array

5) Write a function which takes an array as input from the user and gives back the three maximum elements of that array as output. Name this function as max_3. Generate a random array using randi(10,1,6). Use your max_3 function to find the minimum and maximum of this array. Hint: Use unique and sort functions inside your function.

6) For the max_3 function, you will get an error if you input two element array. How can you write an error message for the user letting them know that they must enter at least a 3-element array?

7) Write a function which takes two arrays from the user and then outputs elementwise multiplication and elementwise division of these arrays as outputs. Hint: Use .* for elementwise multiplication and ./for elementwise division.