***Question 1:***

Perform the following actions:

1. Use the randn function to create an array with a dimension of 5X5, and use a for loop to calculate the sum of all elements in the diagonal of the array. (10)
2. Choose any three functions to apply to this array. (10)

***Question 2:***

Perform the following actions:

1. Use x = np.random.randint(0, 1000, size = (10, 10)) to generate 10x10 array and use a for loop to find out how many even numbers are in it. (10)
2. Randomly generate a 8x9 array from a normal distribute with mean = 1, sigma = 0.5. Calculate the mean of elements whose indexes have a relation of (i+j)%5 == 0  (i is row index and j is column index). (10)

***Question 3***

Perform the following actions:

1. Import data [mtcars.csvPreview the document](https://psu.instructure.com/courses/2008467/files/101579718/download?wrap=1) into Python. (12)
2. Explore the data and perform a statistical analysis of the data. (12)
3. Analyze mpg for cars with different gear, and show your findings. (12)
4. Analyze mpg for cars with different carb, and show your findings. (12)
5. Find out which attribute has the most impact on mpg. (12)