Q1. Create a 5x5 array with random integers between 10 and 50."

Q2. Calculate the mean and standard deviation of each row in a 2D array

Q3. Normalize a 2D array by subtracting the mean and dividing by the standard deviation for each column.

Q4. Implement matrix multiplication without using NumPy's dot function

Q5. Calculate the eigenvalues and eigenvectors of a given symmetric matrix.

Q6. Compute the element-wise cosine of an array and find the maximum value

Q7. Calculate the cumulative product of each column in a 2D array.

Q8. Create a random 2D array and find the kth smallest and largest elements.

Q9. Implement the softmax function for a 1D array of values.

Q10. Create a 2D array and replace all values below a certain threshold with a specified value

Q11. Generate a random permutation of elements in an array.

Q12. Create a 2D array and sort each row based on the values in a specific column.

Q13. Perform element-wise operations on arrays with different shapes, considering broadcasting rules.

Q14. Reshape a 1D array into a 2D array with a specific number of rows and columns.

Q15. Calculate the mean squared error (MSE) between two arrays.

Q16. Find the indices that would sort a 1D array.

Q17. Create a masked array by replacing all values below a threshold with NaN

Q18. Calculate the Pearson correlation coefficient between two arrays.

Q19. Create a 5x5 matrix with values 1, 2, 3, 4 just below the diagonal."

Q20. Given a NumPy array, replace all odd numbers with -1.

Q21. Given a 2D NumPy array, swap its rows - the first row becomes the last, the second becomes the second last, and so on

Q22. Create a 2D NumPy array with dimensions 5x5 filled with random integers between 1 and 100, and then find the sum of each row and each column."

Q23. Create a NumPy array with 20 random integers between -50 and 50. Replace all negative values with 0 without using a loop."

Q24. Create a NumPy array with 10 elements, and then add a border (filled with zeros) around it, making it a 3x3 matrix with the original array at its center."

Q25. Given two NumPy arrays, concatenate them horizontally (side by side) and vertically (stacked on top of each other)."