Q1. If you have any, what are your choices for increasing the comparison between different figures on the same graph?

Adjust the scale or axis limits

Use different line styles or markers

Vary the color palette

Add labels and annotations

Q2. Can you explain the benefit of compound interest over a higher rate of interest that does not compound after reading this chapter?

Compound interest refers to the concept of earning interest not only on the initial principal amount but also on the accumulated interest from previous periods. In other words, it is interest earned on interest. The benefit of compound interest over a higher rate of interest that does not compound lies in the potential for exponential growth of wealth over time

Q3. What is a histogram, exactly? Name a numpy method for creating such a graph.

A histogram is a graphical representation that organizes data into bins or intervals and displays the frequency or count of observations falling into each bin. It provides a visual summary of the distribution of a dataset.

NumPy provides the numpy.histogram method for creating a histogram. This method takes a dataset as input and returns the frequencies or counts of values in each bin, along with the bin edges. The numpy.histogram function allows you to specify the number of bins or the bin edges to control the granularity of the histogram

Q4. If necessary, how do you change the aspect ratios between the X and Y axes?

To change the aspect ratios between the X and Y axes in a plot, you can use the plt.axes function from the matplotlib library. The plt.axes function allows you to create a subplot with a specific aspect ratio.

import matplotlib.pyplot as plt

# Create a subplot with desired aspect ratio

fig, ax = plt.subplots()

ax.set\_aspect('equal') # Set equal aspect ratio between X and Y axes

# Plot your data or histogram

# ...

# Customize other plot settings

# ...

# Show the plot

plt.show()

Q5. Compare and contrast the three types of array multiplication between two numpy arrays: dot product, outer product, and regular multiplication of two numpy arrays.

The three types of array multiplication in NumPy - dot product, outer product, and regular multiplication - have distinct purposes and produce different results.

Dot Product

Outer Product

Regular Multiplication

Q6. Before you buy a home, which numpy function will you use to measure your monthly mortgage payment?

Before buying a home, you can use the numpy function numpy.pmt (Payment) to calculate your monthly mortgage payment. The numpy.pmt function is useful for determining the fixed monthly payment required to pay off a loan, including principal and interest, over a specific period.

Q7. Can string data be stored in numpy arrays? If so, list at least one restriction that applies to this data.

Yes, string data can be stored in NumPy arrays using the numpy.array data structure. However, there are certain restrictions and considerations to keep in mind when working with string data in NumPy arrays.

Fixed-length strings

Memory consumption

Performance considerations

Limited functionality