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

**Ans:** Bar graphs are used to compare facts. The bars provide a visual display for comparing quantities in different categories or groups. Bar graphs help us to see relationships quickly. However, bar graphs can be difficult to read accurately.

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

**Ans:** When it comes to investing, compound interest is better since it allows funds to grow at a faster rate than they would in an account with a simple interest rate. Compound interest comes into play when you are calculating the annual percentage yield. That is the annual rate of return or the annual cost of borrowing money.

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

**Ans:** In statistics, a histogram is representation of the distribution of numerical data, where the data are binned and the count for each bin is represented. More generally, in plotly a histogram is an aggregated bar chart, with several possible aggregation functions (e.g., sum, average, count...). A ndarray object x is created from np. arange() function as the values on the x axis. The corresponding values on the y axis are stored in another ndarray object y. These values are plotted using plot () function of pyplot submodule of matplotlib package.

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

**Ans:** Set the aspect ratio of a plot

1. In [1]: import matplotlib.pyplot as plt import numpy as np x = np. arange(0,pi,0.01) y = np. sin(20\*x) plt. ...
2. In [2]: figure(figsize=(10,3)) plt. plot(x,y) plt. title('plot with undefined aspect ratio') plt.
3. In [3]: figure(figsize=(10,3)) #fig size same as before ax = plt. gca() #you first need to get the axis handle ax.

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.

**Ans:** If both a and b are 2-D arrays, it is matrix multiplication, but using matmul or a @ b is preferred. If either a or b is 0-D (scalar), it is equivalent to multiply and using numpy. multiply (a, b) or a \* b is preferred. If a is an N-D array and b is a 1-D array, it is a sum product over the last axis of a and b.

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

**Ans:** To calculate the monthly mortgage payment, you will use the numpy function. pmt(rate, nper, pv) where: rate = The periodic (monthly) interest rate. nper = The number of payment periods (months) in the lifespan of the mortgage loan.

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

**Ans:** The elements of a NumPy array, or simply an array, are usually numbers, but can also be Booleans, strings, or other objects. When the elements are numbers, they must all be of the same type. For example, they might be all integers or all floating-point numbers.