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

ANS:

a Bar Graph. Bar graphs are used to compare things between different groups or to track changes over time.

Use a bar or column chart to compare independent values. We, as readers, are particularly good at comparing the length of bars in a bar chart (in contrast to the segments of a pie chart, for example), making bar and column charts the best charts for showing comparisons.

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

ANS:

Compound interest causes your wealth to grow faster. It makes a sum of money grow at a faster rate than simple interest because you will earn returns on the money you invest, as well as on returns at the end of every compounding period. This means that you don't have to put away as much money to reach your goals!

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

ANS:

Creating NumPy Histogram

The NumPy histogram() function displays the frequency of data distribution in a numerical form. Rectangles with varied heights and identical horizontal sizes represent frequency and a class interval called a bin, respectively.

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

ANS:

This ratio can be modified by using the matplotlib. axes. Axes. set\_aspect() function.  
...  
How to Set the Aspect Ratio in Matplotlib

1. Step 1: Create a Basic Matplotlib Plot. ...
2. Step 2: Set the Aspect Ratio (The Wrong Way) ...
3. Step 3: Set the Aspect Ratio (The Right Way) ...
4. Step 4: Adjust the Aspect Ratio to Whatever You'd Like.

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:

Matrix Multiplication in NumPy is a python library used for scientific computing. Using this library, we can perform complex matrix operations like multiplication, dot product, multiplicative inverse, etc. in a single step. In this post, we will be learning about different types of matrix multiplication in the numpy library.

In [linear algebra](https://en.wikipedia.org/wiki/Linear_algebra), the outer product of two [coordinate vectors](https://en.wikipedia.org/wiki/Coordinate_vector) is the matrix whose entries are all products of an element in the first vector with an element in the second vector. If the two coordinate vectors have dimensions n and m, then their outer product is an n × m matrix. More generally, given two [tensors](https://en.wikipedia.org/wiki/Tensors) (multidimensional arrays of numbers), their outer product is a tensor. The outer product of tensors is also referred to as their [tensor product](https://en.wikipedia.org/wiki/Tensor_product), and can be used to define the [tensor algebra](https://en.wikipedia.org/wiki/Tensor_algebra).

np. dot is the dot product of two matrices. Whereas np. multiply does an element-wise multiplication of two matrices.

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

ANS:

In order to calculate the monthly mortgage payment, you will use the numpy function . pmt(rate, nper, pv) where: rate = The periodic (monthly) interest rate.

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 boolians, strings, or other objects.

To limit the values of the NumPy array ndarray to given range, use np. clip() or clip() method of ndarray . By specifying the minimum and maximum values in the argument, the out-of-range values are replaced with those values. This is useful when you want to limit the values to a range such as 0.0 ~ 1.0 or 0 ~ 255 .