Q1. What is a probability distribution, exactly? If the values are meant to be random, how can you predict them at all?

Ans: A probability distribution is a list of all of the possible outcomes of a random variable, along with its corresponding probability values. A probability distribution links each outcome of a random variable or process with its probability of occurrence.

Q2. Is there a distinction between true random numbers and pseudo-random numbers, if there is one? Why are the latter considered “good enough”?

Ans: Software-generated random numbers only are pseudorandom. They are not truly random because the computer uses an algorithm based on a distribution, and are not secure because they rely on deterministic, predictable algorithms.

Q3. What are the two main factors that influence the behaviour of a "normal" probability distribution?

Ans: There are two types of probability distributions: Discrete probability distributions. Continuous probability distributions.

Q4. Provide a real-life example of a normal distribution.

Ans: “Height of people”

Q5. In the short term, how can you expect a probability distribution to behave? What do you think will happen as the number of trials grows?

Ans: A probability distribution is a statistical function that describes the likelihood of obtaining all possible values that a random variable can take. In other words, the values of the variable vary based on the underlying probability distribution.

Q6. What kind of object can be shuffled by using random.shuffle?

Ans: a list in place

Q7. Describe the math package's general categories of functions.

Ans: Constant Function: The polynomial function of degree zero.

Q8. What is the relationship between exponentiation and logarithms?

Ans: The logarithmic function can be understood as the inverse of exponentiation, and can be defined when the power of certain numbers is raised in order to get another number.

Q9. What are the three logarithmic functions that Python supports?

Ans: The natural logarithm (log) is calculated using the numpy. ...

The logarithm with a base other than e can be calculated using the numpy. ...

The inverse of the natural logarithm is the exponential function, which can be calculated using the numpy.