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

Probability is the long-term chance that a certain outcome will occur from some random process. A random variable is a variable that is subject to random variations so that it can take on multiple different values, each with an associated probability. 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. For example, if you take blood samples from

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

he distinction between random and pseudorandom. If it's statistically random, then it's pseudorandom for the purposes for which we're using the term. Pseudorandom means it's produced by an algorithm that generates a series of bits that appear unpredictable, but in fact are computed from an algorithm

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

The normal distribution, also known as the Gaussian distribution, is the most important probability distribution in statistics for independent, random variables. Most people recognize its familiar bell-shaped curve in statistical reports.

The normal distribution is a continuous probability distribution that is symmetrical around its mean, most of the observations cluster around the central peak, and the probabilities for values further away from the mean taper off equally in both directions. Extreme values in both tails of the distribution are similarly unlikely. While the normal distribution is symmetrical, not all symmetrical distributions are normal. For example, the Student’s t, Cauchy, and logistic distributions are symmetric.

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

A fair rolling of dice is also a good example of normal distribution. In an experiment, it has been found that when a dice is rolled 100 times, chances to get '1' are 15-18% and if we roll the dice 1000 times, the chances to get '1' is, again, the same, which averages to 16.7% (1/6).

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?

Probability can be approximated by frequency: P(A) = number of times A occurred divided by number of times experiment is repeated. We used the term fair above ...

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

random.shuffle doesn't return a new shuffled list; it shuffles the list in place. So you shouldn't say "print random.shuffle(b) .

Q7. The types of functions can be broadly classified into four types. Based on Element: One to one Function, many to one function, onto function, one to one and onto function, into function. Based on Domain: Algebraic Functions, Trigonometry functions, logarithmic functions.

Q8. What is the relationship between exponentiation and logarithms?

Logarithmic functions are the inverses of exponential functions. The inverse of the exponential function y = ax is x = ay. The logarithmic function y = logax is defined to be equivalent to the exponential equation x = ay. y = logax only under the following conditions: x = ay, a > 0, and a≠1.

Q9 Logarithmic functions are the inverses of exponential functions.

An exponential function is a mathematical function of the following form: f ( x ) = a x. where x is a variable, and a is a constant called the base of the function. The most commonly encountered exponential-function base is the transcendental number e , which is equal to approximately