Law of Large Numbers

1分

One concept that supports our use of random sequences in a simulation is the *Law of Large Numbers* (https://en.wikipedia.org/wiki/Law_of_large_numbers).

Suppose that we have a sample or random sequence $X_1, X_2, \ldots$, we can define the mean of this as $\frac{1}{n} \sum_{i=1}^{n} x_i$.

What does the Law of Large Numbers say about this random sequence? For example, the strong form of the law (https://en.wikipedia.org/wiki/Law_of_large_numbers#Strong_law).

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- The random sequence converges to the mean of the population, that is $x_i \to \mu$.
- As the sample size increases, the randomness decreases.
- The mean of the sample continues to grow as n increases.
- The mean of the sample converges to the expected value (or mean of the whole population).

参考答案: 'The mean of the sample converges to the expected value (or mean of the whole population).'.