1.Statistical significance is assessed by calculating a p-value, which tells you the likelihood that the observed result happened by chance. If the p-value is smaller than a chosen threshold, the result is statistically significant, meaning it’s unlikely to occur due to random variation.

2.The Central Limit Theorem states that the sampling distribution of the mean becomes approximately normal as the sample size increases, regardless of the population's distribution. It’s important because it allows us to apply normal distribution-based techniques in statistics, even when the original data isn’t normally distributed.

3. Statistical power is the probability of correctly detecting a true effect when it exists. High power reduces the risk of missing real effects and is influenced by factors like sample size, effect size, and significance level.

4.Biases are controlled through randomization, blinding, standardizing procedures, and using statistical adjustments like regression to minimize their impact on results.

5.Confounding variables are factors that influence both the independent and dependent variables, creating a false relationship. For example, age could confound the relationship between exercise and health.

6.A/B testing is an experiment where two groups are exposed to different conditions to compare outcomes, often used in marketing or product optimization to determine which version performs better.

7.Confidence intervals provide a range of values that likely contain the true population parameter, offering an estimate of the result’s precision. For example, a 95% confidence interval means there's a 95% chance the true value lies within the range.