12. Inferential statistics help us make conclusions about a big group (population) using only a small part of it (sample). It’s useful because checking every single person or item isn’t possible.

Correlation: Two things seem related, but one doesn’t cause the other.

Causation: One thing directly affects another.

Eg:More ice cream sales and more drowning incidents happen in summer (correlation).

Eating too much sugar causes cavities (causation).

13. Checking a whole population is too much work, so we take a smaller sample to represent it.

Eg-A company surveys 1,000 people instead of millions to predict election results.

14. Hypothesis Testing Concepts

1. Null Hypothesis (H₀): Nothing changes. (Example: “This new diet doesn’t help weight loss.”)
2. Alternative Hypothesis (H₁): There is a change. (Example: “This new diet helps weight loss.”)
3. Significance Level (α): Usually 0.05, meaning we’re okay with a 5% chance of being wrong.
4. P-value: If p < 0.05, we reject H₀ and say there’s a real effect.