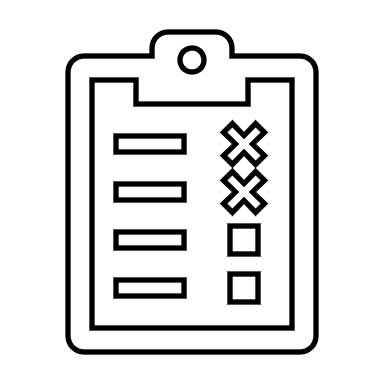
**Comparison Of Different Hypotheses Tests **

| **Test Name** | **Purpose** | **When to Use** | **Example** |
| --- | --- | --- | --- |
| **Z-Test (One-Sample)** | **Compare sample means to known population mean** | **Large sample (n > 30) and population SD is known** | **Test if avg salary is $50,000 when σ = known** |
| **T-Test (One-Sample)** | **Compare sample means to known population mean** | **Small sample (n < 30) and population SD is unknown** | **Test if avg test score is 75 with 10 students** |
| **T-Test (Two-Sample)** | **Compare the means of two independent groups** | **Two separate groups, normal distribution** | **Compare test scores of two teaching methods** |
| **Paired T-Test** | **Compare means of related/paired samples** | **Same group measured twice (before/after)** | **Weight before and after a diet** |
| **Chi-Square Goodness of Fit** | **Test if sample fits a specific distribution** | **Categorical data, expected distribution known** | **Check if color preference is equally distributed** |
| **Chi-Square Test of Independence** | **Test if two variables are related** | **Categorical variables, contingency tables** | **Gender vs product preference** |
| **ANOVA (One-Way)** | **Compare means of 3+ groups** | **Continuous data, more than two groups** | **Compare student scores from 3 schools** |
| **Correlation Test (Pearson)** | **Measure strength of linear relationship** | **Two continuous variables** | **Height vs weight** |