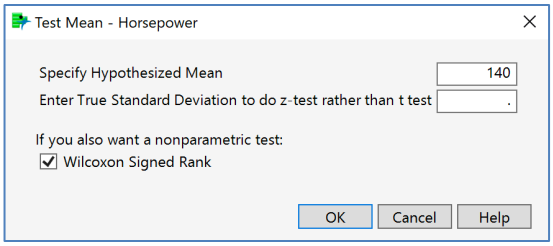
Nonparametric Tests

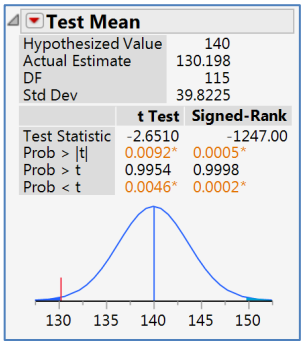
This guide illustrates how to perform a variety of nonparametric tests. For information on nonparametric correlations and measures of association, see the page **Nonparametric Correlations**.

One-Sample Nonparametric Tests

Car Physical Data.jmp (Help > Sample Data Folder)



1. From an open JMP data table, select **Analyze > Distribution**.
2. Select one or more continuous variables from **Select Columns**, click **Y, Columns,** and click **OK**.
3. From the Distributions report window, click on the **red triangle** for the variable and select **Test Mean**.
4. Enter the hypothesized value under **Specify Hypothesized Mean**, check the **Wilcoxon Signed Rank** box, and click **OK**.
   The hypothesis being tested under the Wilcoxon Signed Rank test is: H_0: Median = 140 vs. H_A: Median ≠ 140



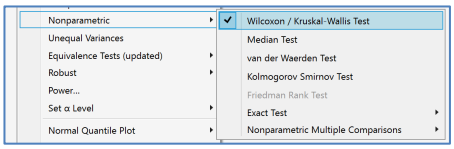
   The following results for both the one-sample t-Test and the Signed-Rank are provided.

   - The **test statistics** (the t-Test and Signed-Rank).
   - **P-values** for both one- and two-tailed tests. The p-value for the two-tailed test is next to **Prob > |t|.**

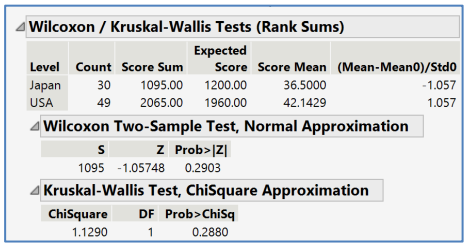
Two-Sample and Oneway Nonparametric Tests

1. Select **Analyze > Fit Y by X**.
2. Select a continuous variable and click **Y, Response**, and select a categorical variable and click **X, Factor**, then click **OK**.
   The **Oneway Analysis** output window will display.
3. Under the red triangle, select **Nonparametric > Wilcoxon Test / Kruskal-Wallis Test** to perform the analysis adding results to the report.
   - If the categorical variable has only two levels, both the **Normal Approximation** and **ChiSquare Approximation** test statistics and corresponding p-values with be shown.
   - If the variable has three or more levels, only the **ChiSquare Approximation** will be performed.

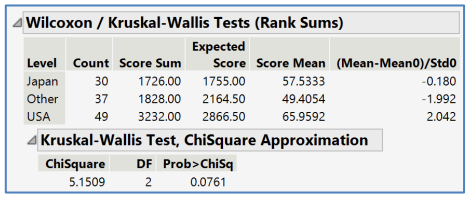
   Note: the **Wilcoxon / Kruskal-Wallis Rank Sum Test** is sometimes called the Mann-Whitney Test.



A test on Horsepower amount across two country levels



A test on Horsepower amount across three country levels



Visit **Basic Analysis > Distributions > Options for Continuous Variables > Test Mean**, **Basic Analysis > Oneway Analysis > The Oneway Platform Options**, **Basic Analysis > Oneway Analysis > Oneway Analysis Reports** to learn more.