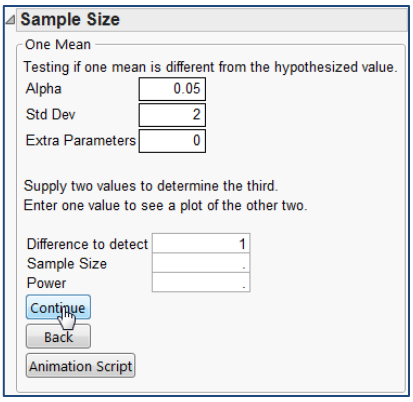
Sample Size and Power for Testing Means

Use to calculate sample size and power for tests involving means. For sample size and power calculations for tests involving proportions, see the page **Sample Size and Power for Testing Proportions.**

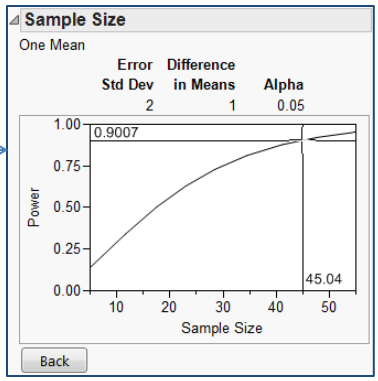
Sample Size and Power - One or Two Sample Means



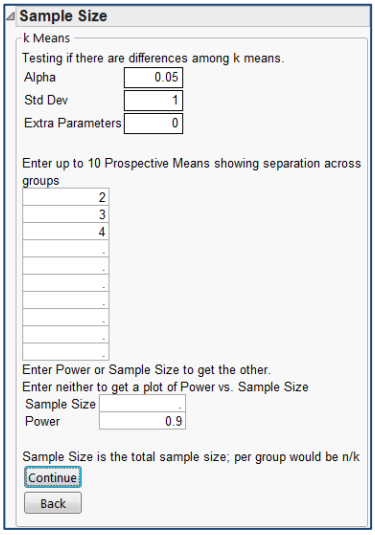
1. Select **DOE > Design Diagnostics > Sample Size and Power** and choose **One Sample Mean** or **Two Sample Means**.
2. Enter the significance level, **Alpha** (0.05 by default).
3. Enter the **Std Dev** (the historical standard deviation).
4. Leave **Extra Parameters** at the default, 0.
5. Enter the values for any two of the following:
   - **Difference to detect** (the difference between the hypothesized and observed mean, or the difference between two means.)
   - **Sample Size**.
   - **Power**.
6. Click **Continue.** JMP® will calculate the third value.

   If you enter only one value, JMP will plot the relationship between the other two. Use the cross-hair tool ( ) to explore the values.

   Hint: For One Sample Mean, click the **Animation Script** to open the **Power Animator**.



Sample Size and Power - More than Two Samples



1. Select **DOE > Design Diagnostics > Sample Size and Power** and choose **k Sample Means.**
2. Enter the significance level, **Alpha** (0.05 by default).
3. Enter the **Std Dev** (the historical standard deviation).
4. Leave **Extra Parameters** at the default, 0.
5. Enter the values for up to 10 **Prospective Means**. Hint: To detect a difference of *d* units between any two means, enter two means at values *d* units apart, and enter all of the other means at the average value.
6. Enter a value for either **Power** or the total **Sample Size**, or leave both blank.
7. Click **Continue**.

   JMP will calculate the other value, or will plot the relationship between power and sample size (if both fields were blank).

Notes: For two samples and k samples, the total sample size is calculated; divide this by the number of groups for the sample size per group. For more details, search for "power" under **Help > Search** or in the book ***Design of Experiments Guide*** (under **Help > Books**). To calculate the sample size for the confidence interval for a mean, use the calculator under **Help > Sample Data > Calculators** (under Teaching Resources).