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Practice: Calculating Sample Size for a Two-Sample t Test

You want to compare two methods for producing the glass used to make industrial windows. The target thickness is 3 mm. You are concerned that the average thickness for glass produced using the two methods is different.

1. Use the Sample Size and Power platform in JMP to determine the sample size required to detect a difference of 0.1 mm with a power of 0.8. Assume that your standard deviation is 0.12 mm.

   Hint: Select **DOE**, **Design Diagnostics**, **Sample Size and Power**, and then select **Two Sample Mean**.

2. What sample size would be required to detect this difference?

   With a standard deviation of 0.12, an alpha level of 0.05, and a power of 0.8, you'd need to measure a total of 48 windows (24 per method) to detect an average difference of 0.1 mm.

3. What sample size would you need to detect the same difference with a power of 0.9?

   You would need 64 observations, or you would need to measure 32 windows per method.

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