IT Works!

The PHStat add-in for Microsoft Excel® and the Data Analysis Toolpak® contain functions for hypothesis testing. In this section, you will explore the different hypothesis testing functions you can use. Make sure that the PHStat add-in and Data Analysis Toolpak are enabled.

Hypothesis Testing Using the Data Analysis Toolpak

Some statistical tests, such as the z-test and the t-test, are available under the Data Analysis Toolpak of Microsoft Excel®.

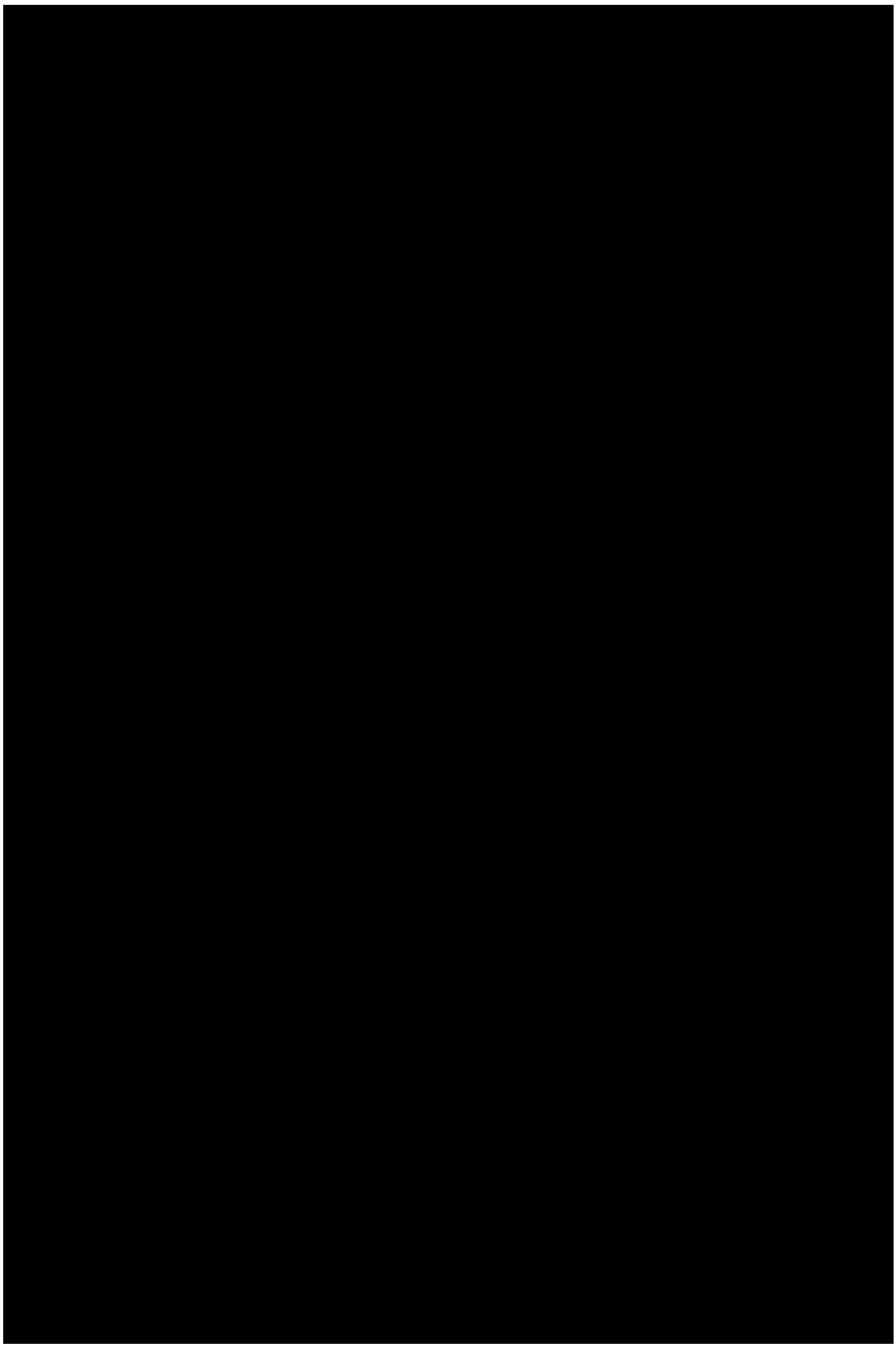
Enable the Data Analysis Toolpak by following these steps.

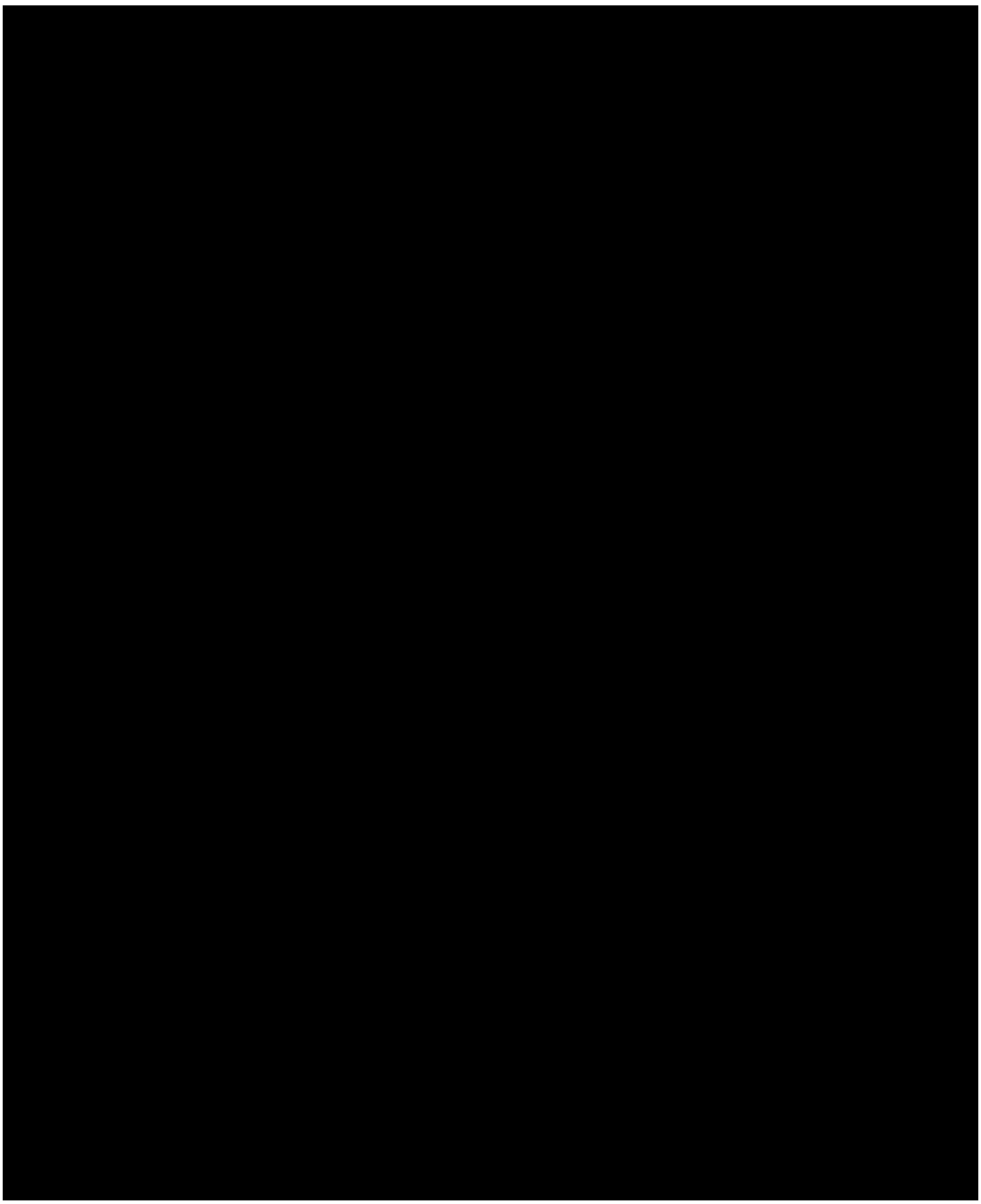
1. First, under the **File** menu, click **Options**. The Excel Options window should appear.
2. Click **Add-Ins**. In the Add-ins box, click **Data Analysis Toolpak**. Then click **Go . . .** . The Add-Ins window should appear next.
3. In the Add-Ins window, check **Data Analysis**. Then click **OK**. The Data Analysis button should now appear in the Analysis group in the Data menu.

Hypothesis Testing Using PHStat

Given below are PHStat hypothesis testing functions for one-sample tests.

Hypothesis Test	*PHStat Function*	*Information to Supply*
One Population Mean μ, σ Known	Select **One-Sample Tests, then Z-Test for the Mean, sigma known . . . .**	• Population mean hypothesized value μ_0 • Level of significance α • Population standard deviation • Sample statistics or cell range of data • Test options
One Population Mean μ, σ Unknown	Select **One-Sample Tests, then t-Test for the Mean, sigma unknown . . . .**	• Population mean hypothesized value μ_0 • Level of significance α • Sample standard deviation*s* • Sample statistics or cell range of data • Test options
One Population Proportion p or π	Select **One-Sample Tests, then Z-Test for the Proportion . . . .**	• Population proportion hypothesized value p_0 • Level of significance α • Number of items of interest x • Sample size n • Test options
One Population Variance σ^2	Select **One-Sample Tests, then Chi-Square Test for the Variance . . . .**	• Population variance hypothesized value σ_0^2 • Level of significance α • Sample size n • Sample standard deviation s • Test options





Note that F-test for two population variances will help you check if the assumption of equal or unequal variances in the *t*-test for two population means is correct. If you are conducting your research, you can test if two population variances are equal or not, and then apply the appropriate *t*-test.