

# Simple Linear Regression

Use to model the bivariate relationship between a continuous explanatory variable with a continuous outcome variable. Useful to describe the relationship between the variables and to predict an outcome for different values of the explanatory variable.

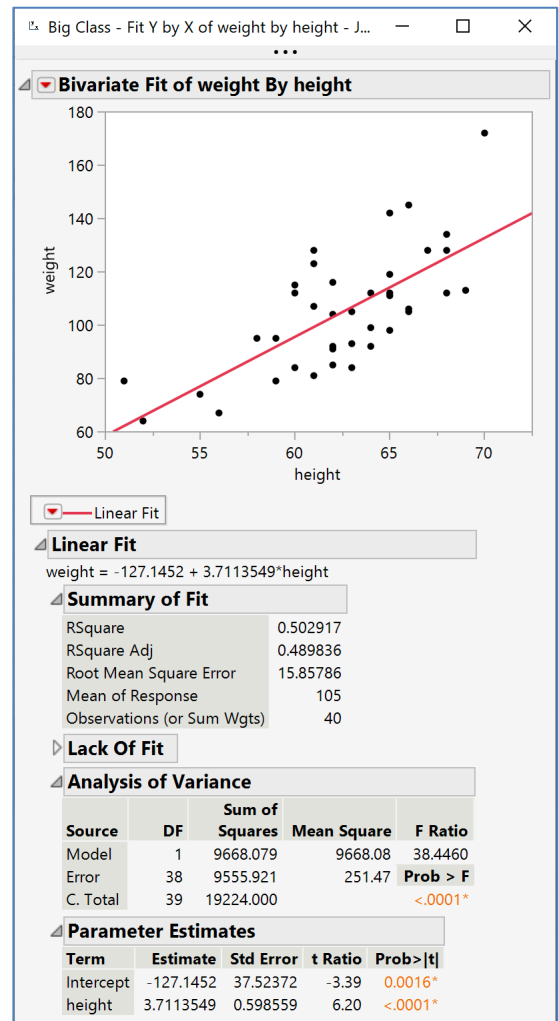
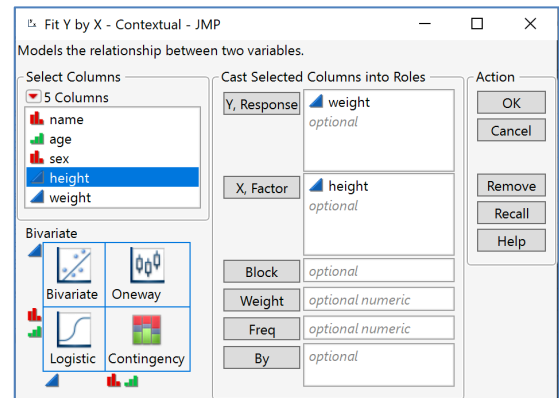
## Simple Linear Regression Using Fit Y by X

1. From an open JMP® data table, select **Analyze > Fit Y by X**.
2. Click on a continuous variable from **Select Columns**, and click **Y, Response** (continuous variables have blue triangles).
3. Select a second continuous variable, and click **X, Factor**.
4. Click **OK** to generate a scatterplot.
5. To fit a regression line, click on the **red triangle** and select **Fit Line**.

By default, JMP will provide the following results:

- The regression equation (under Linear Fit).
- The Summary of Fit.
- Lack of Fit (if the data table includes replicates of X values).
- The ANOVA table.
- The parameter estimates.
- For other fit options, such as **polynomials**, **transformations** (fit special) and **spline** (under flexible), use the **top red triangle**.
- To add a legend, change markers, or make other changes to the graphical display, right-click on the graph.
- Double-click on the axes to change axes settings.
- Other analysis steps common in linear regression (e.g., **plotting residuals**, adding **confidence bands**, **saving predicted values and residuals to the data table**, among others) can be found under the **red triangle** next to the title of the equation fit (e.g., “Linear Fit”).
- To fit separate lines for categories of a grouping variable, click on the **top red triangle**, select **Group By**, and choose a grouping variable. Then, click on the **top red triangle** again and select **Fit Line**. JMP will fit separate lines and provide results for each level of the grouping variable.

Big Class.jmp (Help > Sample Data Folder)



Visit **Discovering JMP > Analyze Your Data > Analyze Relationships** and **Basic Analysis > Bivariate Analysis** in **JMP Help** to learn more.