## Least Squares Regression Worksheets and Graphs

- 1. Use the Marginal Profit document as a guide to prepare worksheet data and graphs.
- 2. Some specific updates for the Least Squares Regression worksheets are:
  - a) to create text over multiple rows and columns, highlight the desired region ->format->cells->alignment->then check both wrap and merge
  - b) to add color to a cell, format->cells->pattern->select color
  - c) to create a superscript when creating text (used for  $x^2$ ), format->font->check superscript, then uncheck it when done with the superscript.
- 3. Updates to create the charts with least squares regression models:
  - a) select only the data cells B7:C17, highlight the chart wizard and proceed to graph the actual data, save the graph with the procedure next->place chart as new sheet and type in the name Linear rather than use the default name chart1
  - b) after creating the scatterplot and when it appears on the screen, from the Chart menu (if the graph was saved as an object rather than as a new sheet, single left click the graph before the Chart menu will appear), select Add Trendline, select Linear, and click the Options tab to display both the linear equation and R<sup>2</sup> values, click OK to the modeled results
  - c) to resize any displayed headings or equations, highlight the desired material, format->cells->font and resize as wanted
  - d) to save the updated graph, right click on the graph->location->save with the same name just used, i.e. <u>Linear</u>.
- 4. To create an exponential least squares regression model, follow a similar procedure as described above but select Exponential when in the Add Trendline mode. Save the updated graph as <u>Exponential</u>.
- 5. To create a quadratic model, select Polynomial and Order 2 in the Add Trendline mode. Save the updated graph as <u>Quadratic</u>.
- 6. All models can be superimposed on a single graph by repeating steps 3-5 before saving the graph as <u>Chart of all models</u>.