FATHOM Quick Reference (importing from Excel and "how to" videos are on the last two pages)

Inputting your own data

- Open a new fathom document
- Pull down a collection
- While the Collection icon is highlighted, pull down a TABLE
- At the top of the table, type in your variable names
- Type data in below variable names
- Keep this table open while you are doing all data analysis

Making graphs

- Pull down the GRAPH icon
- Drag the variable(s) that you want from the TABLE to the GRAPH
- You can change the type of graph in the top right corner
- To split graph by a categorical variable (like gender):
  - Drag the quantitative variable to the X axis
  - Drag the categorical variable to the Y axis
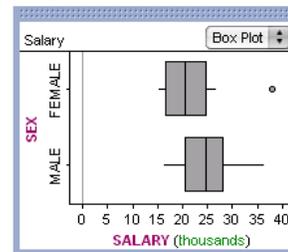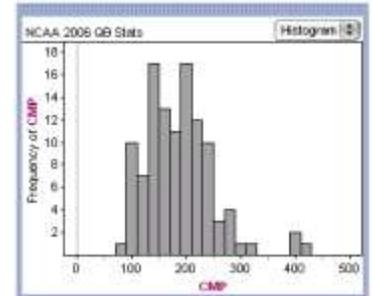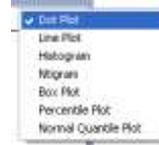
Copying Graphs to Word Documents or Power Point slideshows

- To copy a graph to a word document, select the graph
- In the menu select Edit->Copy as Picture or hit Ctrl+Shift+C
- In your word document select Edit->Paste or hit Ctrl+V

Using the "Snipping tool" to copy things from Fathom

- Click on the WINDOWS icon (bottom left corner of your computer screen
- Click on "All Programs →"
- Find the Snipping tool, and click on it so it opens
- You will see the screen go gray, and then your mouse will turn into a "**+**"
- Use the mouse to "highlight" whatever it is you want to copy.
- You will then see the image you highlighted. Copy this (CTRL + C) and then go to your document (Word or Power Point) and paste the image (CTRL + V).

Finding Summary statistics

- Pull down a SUMMARY icon
- Drag the Variable that you want into the summary table
- The mean should show up
- To add std. deviation, go to the SUMMARY menu at the top of the screen, click on "Add Formulas," then type in S() and hit ENTER
- To add 5# summary, go to the SUMMARY menu at the top of the screen, and click on "Add 5 Number Summary"
- To break down summary statistics by a categorical variable (like Gender), do the same process as above. However afterwards, drag the categorical variable to the top of the summary table

Creating a table or a two way table (categorical data)

- Pull down a new summary table
- Drag the variable to the top of the table. This will create a table for one

  categorical variable.
- To create a two-way table, drag a second categorical variable to the left side of the summary table.

Creating Bar Graphs (using EXCEL)

- Open an Excel document
- Create a summary table of a categorical variable. (like the one at right)
- Transfer the table you just created on Fathom to Excel by hand (you cannot copy and paste)
- (In Excel) Highlight just the data (don't include the variable name and don't include the total).
- Go to Insert → Column → 2D column → and pick the one at the top left.
- This will create a bar chart for you. You can edit the title and other things on the chart.
- You can also select 3D column, for a fancier picture.
- Pie charts can also be selected.

- To create a stacked (segmented) bar chart, first create a 2 way table (with 2 categorical variables). (like the one below, at left)
- Transfer the table to Excel by hand
- Highlight the data (again, don't include totals or variable names) and go to Insert → 2D or 3D column → and use the 3rd one over (the one where the bars go all the way up to the top).
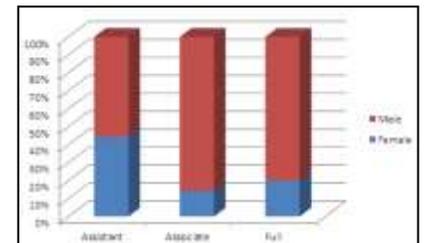
Making Scatterplots

- Drag down a new graph. Grab the X variable and drag it to the x-axis.
- Grab Y variable and drag it to the y-axis of the graph.
- You should have a scatterplot

Finding correlation coefficient

- Drag down a new summary table.
- Drag the X variable to the left side of the table
- Drag the Y variable to the top of the table
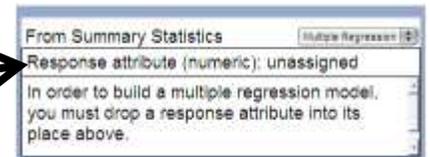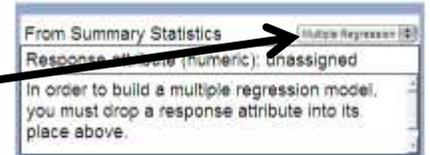- The correlation coefficient should be stated in the center.

Finding the LSRL and the Residual plot

- While the scatterplot is highlighted, go to the drop-down menu GRAPH and click on "Least-Squares line"
- You will notice that the LSR line has been added to your scatterplot and the equation and r^2 are listed down at the bottom of the plot.
- To make the residual plot: Make sure the graph is still highlighted, and go to the menu GRAPH again, and this time click on "Make Residual Plot"
- The residual plot will appear below the scatterplot. Make the entire picture bigger so you can clearly see the residual plot.
- You can use the snipping tool to put the residual plot on your power point separately from the scatterplot.

Finding the equation of the LSRL (LSR line)

Model

- Drag down a MODEL
- Change the type (in the top right corner) to "Multiple Regression"
- Click on the "MODEL" menu at the top of the page
- Click on "Hide Sequential Contributions chart"
- Click on the "MODEL" menu again, and then click on "Hide ANOVA table"
- Drag the Y-variable to the top, where it says "Response attribute (numeric): unassigned"
- Drag the X-Variable to the top middle, where it says "Drop attributes here to add predictors to the model"
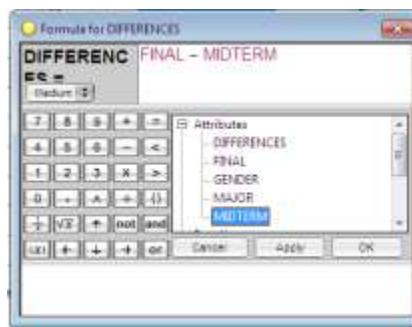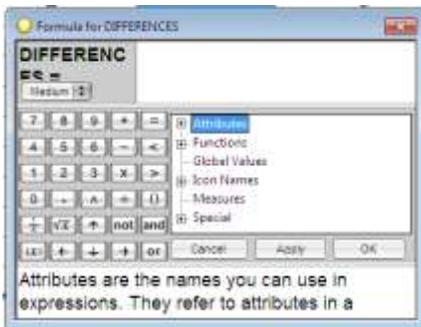- You will then see a lot of data analysis like this:

- LSR line- round the slope and Y-Intercept to 3 decimal places

  Example from above: $\widehat{YDS}$ = -481.700 + 8.776(ATT)

- Don't forget to put a "HAT" over the Y-variable!

Subtracting one list of data from another list:

- In your table of data, scroll over until you find a blank variable "<NEW>"
- Rename it (DIFFERENCES)
- Go up to the TABLE menu, and click on "Show Formulas." You will see a Gray row appear at the top of your table.
- Double click on the gray box in the "Differences" column. A Formula window will appear.
- On the right side of this window, you will see "+Attributes." Click on the + sign next to ATTRIBUTES.
- Then double click on FINAL, type a subtraction sign, then double click on MIDTERM (see below)
- Then hit the OK button. You will now see the list of differences.

Copy and Paste a Table from Excel

1. Create another new workspace in fathom. Drag an empty Collection box into the workspace. Using your mouse, highlight the data on the Excel spreadsheet including the variable names. Copy this by right clicking and selecting **copy** or selecting **copy** from the Edit menu (or use ctrl-C). Return to *Fathom* and select the empty collection box. Right click and select **Paste Cases**.
2. Double click on the **Collection Box**. Under comments, use copy and paste record the URL and any links you used to access the Internet site, other information about the data may also be included. Give the collection a suitable name.
3. Some methods of data import will require data cleanup. Create a Case table, Select the Age attribute column, right click and select Sort Ascending. **Notice that several top rows of data contain asterisks for this attribute. Often asterisks are used for missing data and you would have to delete all asterisks leaving those cells empty.**

If you experience difficulties importing data into fathom "properly" try the copy and paste method into a spreadsheet program first, clean up the data if necessary, and then copy and paste into fathom. For extra help consult the help file in Fathom.
Contents > How To's > Work with Collections > Get Data into Fathom:
  Paste Data into a Collection
  Import data From a Text File
  Import Data from the Internet
Contents> Getting Started > Getting Data:
  Enter Data from Scratch
  Copy and Paste Data from Another Program

"How to" videos are on the next page

Import Excel data into Fathom

https://www.youtube.com/watch?v=nWH5i5muEgI

Make a histogram

https://www.youtube.com/watch?v=1HHZ2PKAlEA

Make summary statistics

https://www.youtube.com/watch?v=7lCBndE-poM

Make a scatterplot and residuals

https://www.youtube.com/watch?v=Y-XZ0IB8_e8