

This is just a quick how-to guide for only a couple common graphing features of Logger Pro. For more involved stuff, look in Help, read the quick reference manual, or just fiddle around. Feel free to edit this document and email me the changes if you do. It will help future users of this program.

Mr. A

Contents:

1. Making a new graph
2. Creating a best fit line or curve
3. Finding slope
4. Finding area under the graph
5. Making graphs from movie clips

1. Making a new graph:

When you open Logger Pro, the default view will be 2 empty columns waiting for data, and a graph area. Go ahead and start putting your data into the columns. The data will be graphed instantly.

If you want **multiple sets of data**

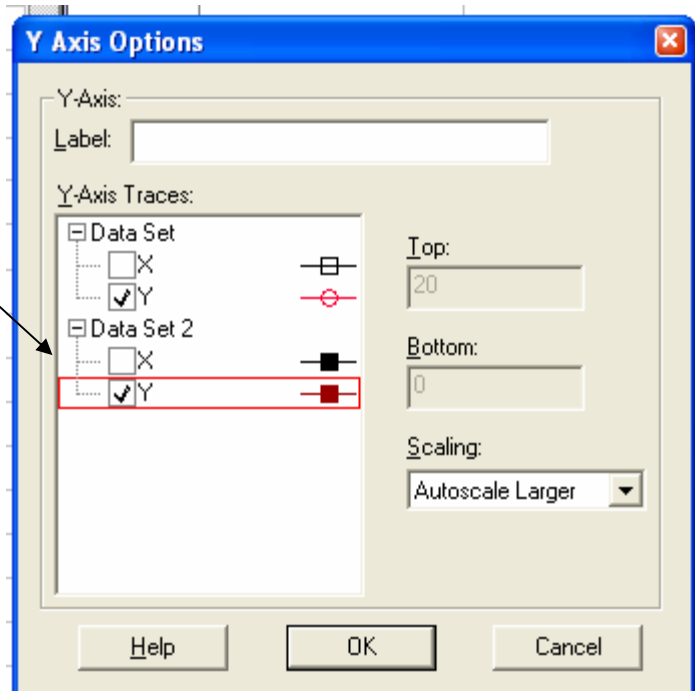
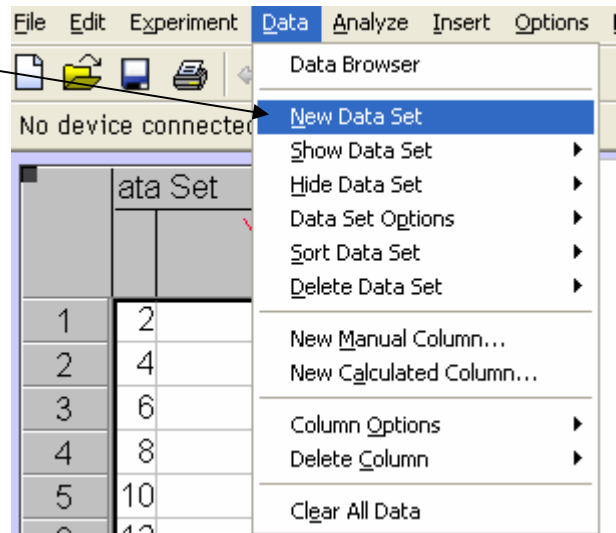
- select Data->New Data Set.

This will give you a new X and Y column. If your X data is the same as before, you can cut and paste the data from one column to another. If it's different, go ahead and put in the new data.

To get your **new data to show up**

- click on the "Y" on the Y axis.
- Select **more...**

- Click on the little "+" sign for Data Set 2, and put a check in the Y box. This will put the data from Set 2 on the graph.



2. Creating a Best Fit line or curve:

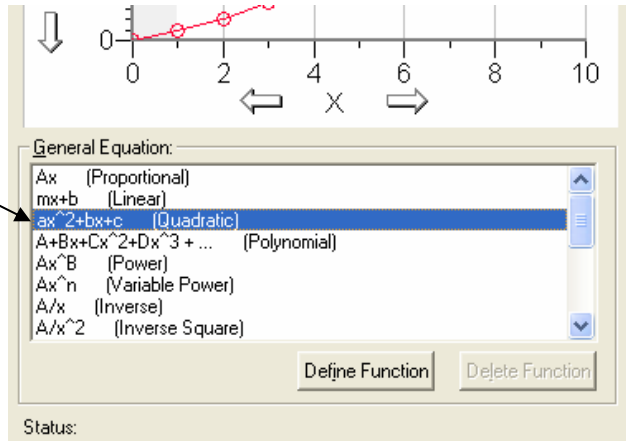
After inputting all your data, select either the **Linear Fit** or **Polynomial Fit**. Linear will give a straight line. Only use Linear if your data appears to be pretty straight.

- If you want to exclude some points from your best fit line, highlight in the table or on the graph only those points you want to consider)



For curves, you'll need to use the Polynomial Fit.

A **quadratic** fit will usually work (If you have a more erratic graph, the polynomial choice, and choose 3 for the degree).



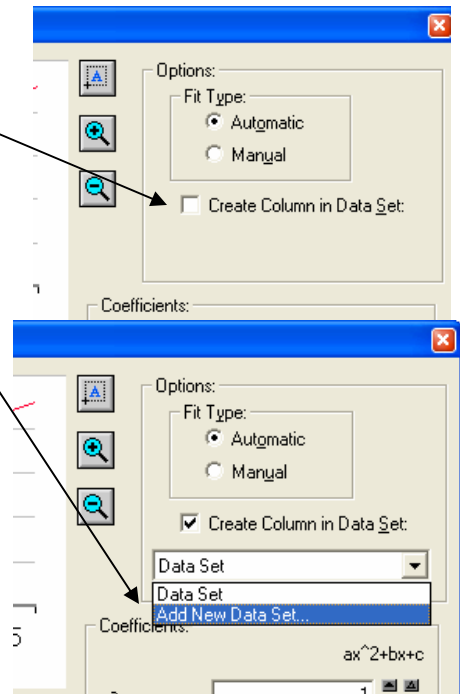
well.
use
or 4

3. Finding the slopes at points on your best fit line:

- Check the box **Create Column in Data Set**.
- A new box will pop up: Select **Add New Data Set**.
- A popup box will ask you to name the new data set. Give it a name (doesn't really matter what).
- To make these selections happen, click **Try fit**, then **OK**.

Now you'll see your original data with a best fit line on top of it. However, even though you see the best fit line, you won't be able to find the slopes on it yet.

- You must make your new set of data appear on the graph. Follow directions on previous page for "**new data to show up**", then...
- Click the **Tangent** button (finds slope)



You'll now see a box that tells you the slope of both your original data, and of the best fit curve.

4. Finding Area Under the Graph

- Displacement (Velocity vs. time)
- Work (Force vs. displacement)
- Impulse (Force vs. time)

Highlight the set of data you want to find the area of in the data column. (you might be interested in making a best fit curve first, if your data is jumpy). Then click the "integral" button. That does it.



5. Making graphs from movies

- Click "insert" and choose "Movie..."

Your movie will now show up on top of the data columns and graph area

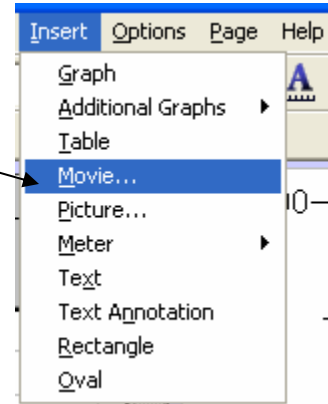
- Click on this little icon in the lower right hand corner:





Some new buttons will appear.

To begin taking point and click data:

- Click on the crosshair button near the top:
- Now choose a point on the moving object in the picture that you think is the center of mass, and click on it.
- Each time you click, the movie will advance one frame, and automatically graph the data as you go.



There are lots of things you can do with the buttons on the right, and most are pretty self-explanatory. If you don't choose anything, the graph will automatically choose an origin and a scale.

- You can click "origin"  and set the origin in your clip
- You can click "scale"  and tell the data logger how big things are in your video (it helps if someone is holding a meter stick in the video)