<u>Using Technology to Graph Data (accessibility dependent)</u>

- a much more efficient way to do work

- we will focus on Microsoft Excel, but there are other software titles that can do this

- Office 365 locally installed version is used here, the online version is trimmed down and doesn't have all of the features of the installed version

Key Terms for Excel

- Rows are horizontal

- Columns are vertical

- Trendline (line or curve of best fit)

- R^2 value is statistical grade of how"good" your line/curve of best fit matches your data

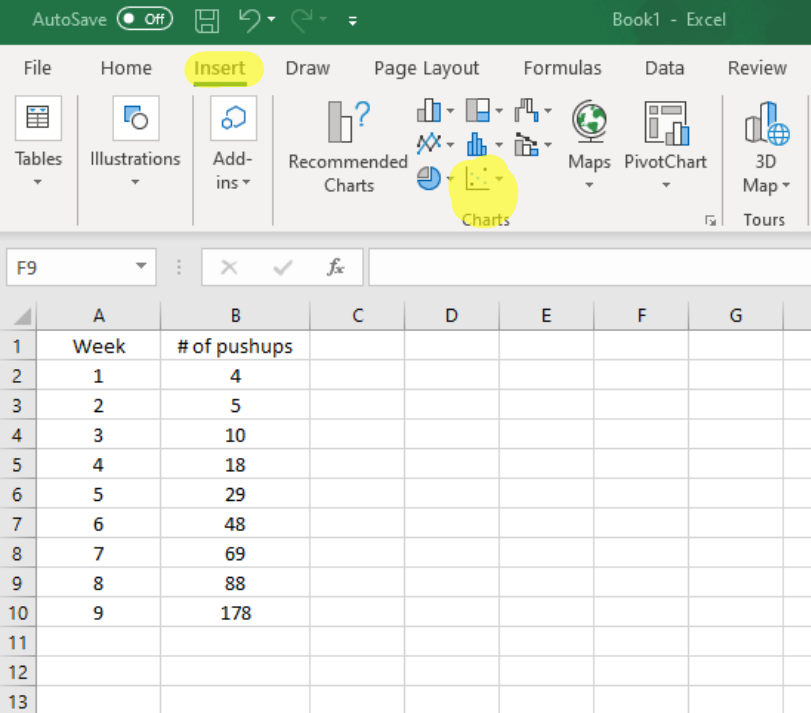|	# of
Week	Pushups
1	4
2	5
3	10
4	18
5	29
6	48
7	69
8	88
9	178

In Excel enter the following data.

Try using a line of best fit, linear regression, on the data.
Try using a Quadratic regression on the data.
Try using a Exponential regression on the data.

Which regression best fits the data?

Enter the independent variable in the FIRST column (you can change it later if you need to, but its a pain).

Enter the dependent variable in the second column.

Hold left click the mouse and highlight the two columns you want to graph.

Move to INSERT on the top menu and choose CHARTS, SCATTER.

A graph should be created immediately, you can adjust scales by clicking on the different axis.

Depending on your message, the appearance of the graph can sway your audience.

To insert a Trendline (line of best fit), left click on the data points in the graph (they will highlight) then RIGHT click to reveal the menu insert above.
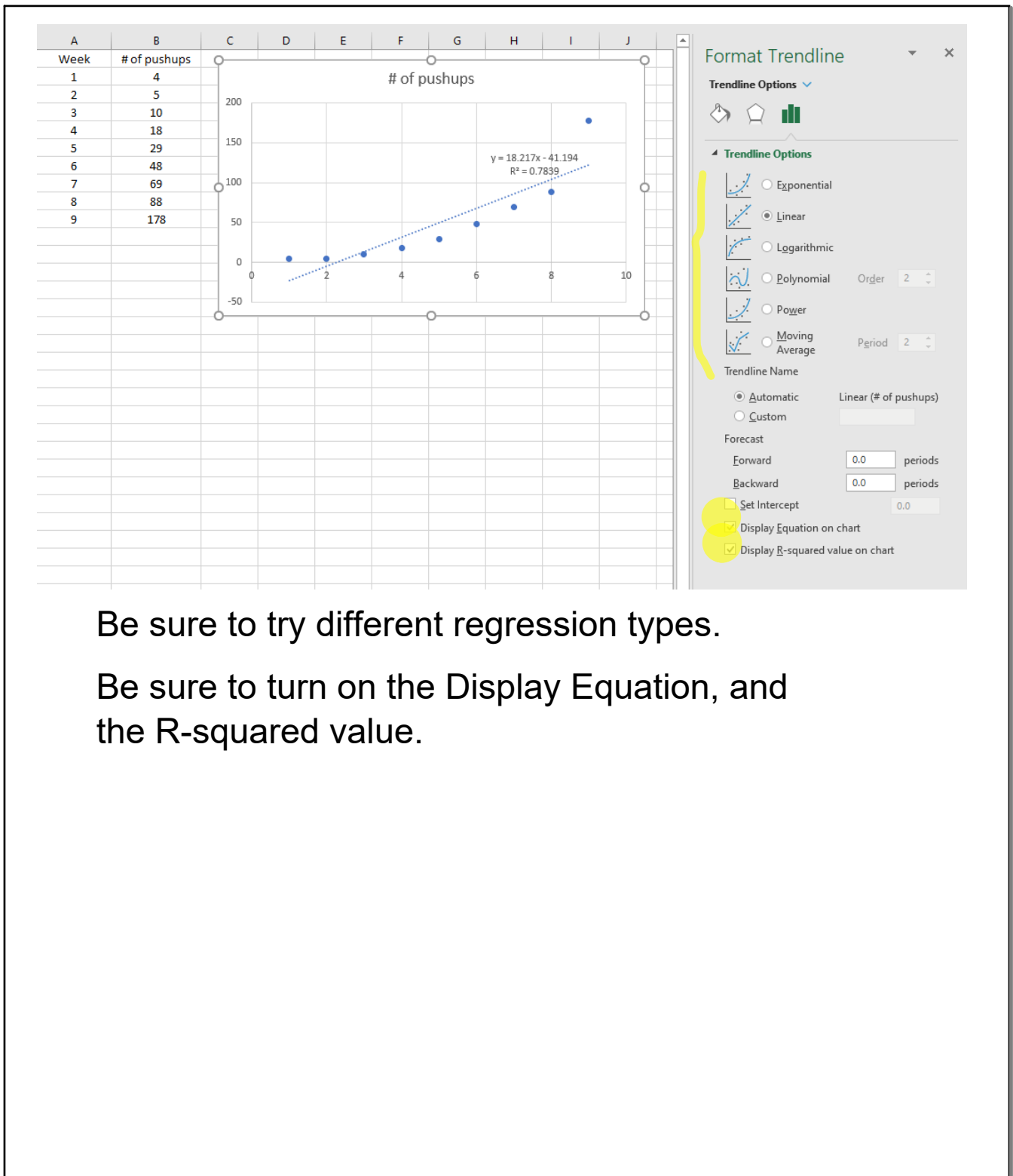
Be sure to try different regression types.

Be sure to turn on the Display Equation, and the R-squared value.

Homework

Redo the two examples from the first lesson in Excel and compare our equations generated by hand to those generated in Excel. Try other regressions to see if you can get a higher R-squared value.

Bill tracked his earnings from his waitering job at a local restaurant.
Create a scatter plot for the following data.
Apply a line of best fit once the data has been plotted.

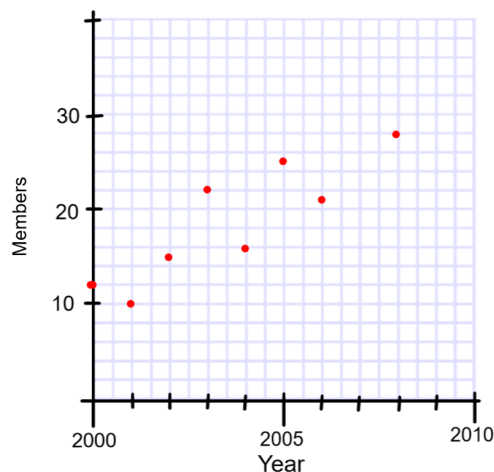| Time (hr)	$ earned
3	48
5	72
2	30
9	144
12	152
14	170
7	90
8	96
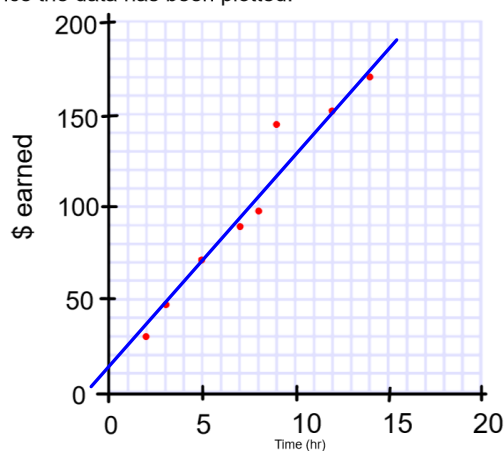
By hand

$y = 110/9 \ x + 10$

$y = 12.2 \ x + 10$

The Rock climbing Club tracked its membership for the last few years. Create a scatter plot for the following data.
Apply a line of best fit once the data has been plotted.

Year	Members
2,000	12
2,001	10
2,002	15
2,003	22
2,004	16
2,005	25
2,006	21
2,008	28

By hand

$y = 2 \ x - 3988$

* Watch the y intercept idea carefully