

NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

## WORKSHEET 3

### CREATING LINEAR GRAPHS USING MICROSOFT EXCEL

Open **Excel** and open a **Blank workbook**.

Enter data into spreadsheet cells (boxes): X-axis data in column A; Y-axis data in column B; headings are optional.

Click<sup>1</sup> and drag to highlight data, then release.

Click on the **Insert** tab, then click on **Charts** → **Scatter**. *An XY (Scatter) plot should appear.*

Click on the chart, then click on the + box in the upper right corner.

Check the Chart Elements you want, including: Axes, Axis Titles, Chart Title, Trendline.

Click on Chart Title and a box will appear around it. Type your title, then click elsewhere.

Repeat for each of the Axis Title boxes.

Right-click on the Trendline, then click on **Format Trendline...**

In the Format Trendline pane, select the options you want, including: Linear, Set Intercept, Display Equation on chart, Display R-squared value on chart.

To print both the data and the chart, click on any empty cell, then click on the **File** tab, then click on **Print**.

Review the Print Preview window to confirm everything will print on one page. If not, click on the **No Scaling** option and change it to **Fit Sheet to One Page**.

To save both the data and the chart as a PDF, click on **Save as Adobe PDF** (located directly above **Print**). Select the radio buttons for **Entire Workbook** and **Fit to paper width**. Click on **Convert to PDF**, then **Save**.

Scientific (exponential) notation may be entered using the letter “e”.

For example,  $5.00 \times 10^{-3}$  is entered as 5.00e-3.

<sup>1</sup> Throughout the instructions on this page, “Click” means to specifically use left-click on a mouse.

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Use the following data to plot Circumference (cm) vs. Diameter (cm).

Beaker Volume (mL)	Circumference (cm)	Diameter (cm)
50.0	17.8	6.3
150.0	26.4	8.1
250.0	31.9	10.4
400.0	42.5	13.2
600.0	47.1	14.5

The point (0,0) for this data is a known value and should be incorporated into the graph as the y-intercept (not a data point). Go to **Format Trendline...** and then **Trendline Options**.

Make sure that you print the data table (values in an array of spreadsheet cells) with the graph. Also, display the *linear equation* and the  $R^2$  value on the graph.

Use the following data to plot Absorbance vs. Concentration (M).

Standard Solutions	Concentration (M)	Absorbance
1	$1.00 \times 10^{-3}$	0.349
2	$2.00 \times 10^{-3}$	0.772
3	$3.00 \times 10^{-3}$	1.040
4	$4.00 \times 10^{-3}$	1.521
5	$5.00 \times 10^{-3}$	2.106

Again, the point (0,0) for this data is a known value and should be incorporated into the graph as the y-intercept (not a data point). Go to **Format Trendline...** and then **Trendline Options**.

Make sure that you print the data table (values in an array of spreadsheet cells) with the graph. Also, display the *linear equation* and the  $R^2$  value on the graph.