

**A.S. Physics Summer Homework:** *just when you thought you could relax*

There are 3 parts to this. The third part is a written assignment.

**Part 1: Stuff to Get**

- ⇒ Access to the Internet. Nearly ALL of our homework will be on-line thru WebAssign. (check it out.)
- ⇒ Spiral-bound notebook to be used for physics notes and labs. You can get a big, partitioned one to also use for other subjects, but the physics portion should be well defined. Selected notes and lab records will be checked for credit. Loose papers will not be accepted.
- ⇒ Calculator which must have the following functions: plussing, take-away, timesing, goes-into, square rooting, trig and inverse trig.
- ⇒ An empty, 2-liter soda bottle, rinsed. (with cap would be nice).

**Part 2: Stuff to Learn**

You'll need these skills almost immediately and all year long for lab reports

If you do not have a computer:

- Find a friend who does and work with her or him.
- Find a public library that has OpenOffice or other spreadsheet software available.
- Contact me (Mr. DeCurtins) at [jdecurti@seq.org](mailto:jdecurti@seq.org) over the summer to arrange some classroom time before school starts during which you can use the classroom computers.

If you do not have Excel, you can download OpenOffice for free and in most ways it is BETTER than Excel.

1. Learn to use word processing software (e.g., OpenOffice or MS Word) so that you can produce type-set lab reports. Your skills with this kind of program should include the ability to embed (paste) spreadsheet tables, graphs, and pictures into the body of your reports.
2. Learn to use a spreadsheet application (e.g., OpenOffice or MS Excel). This is necessary for presenting lab data analysis. (See Assignment **A** below.)  
Several on-line tutorials are available to help you.

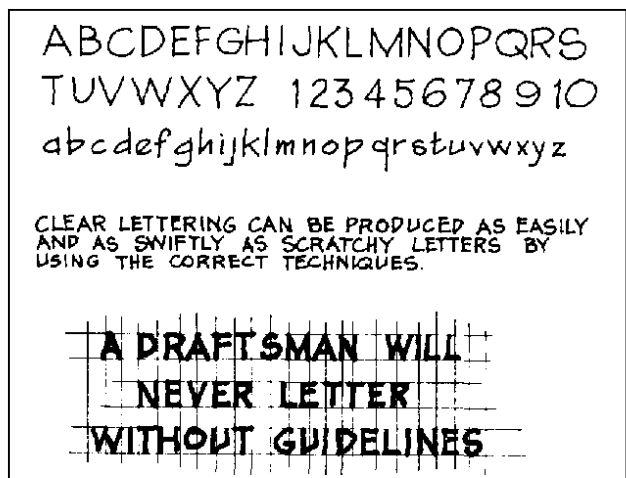
Excel: <http://www.ncsu.edu/labwrite/res/gt/graphtut-home.html>

OpenOffice:

NOTE 1: Google Docs spreadsheets are not powerful enough for our work.

NOTE 2: Excel 2007 is a stupid redesign by Microsoft. See separate doc for help on this.

3. Learn to PRINT. Sounds crazy, but you'll have to show work on tests and label hand-drawn sketches with something a lot better than scribble. I will not spend ANY time trying to decipher your handwriting. If I cannot read it easily, it's wrong. You can find hints and guides on-line, with keywords such as drafting, lettering, etc.



**Part 3: Written Assignments** (due the first Monday of school)

There are 2 separate assignment papers due: 3A and 3B.

**3A:** Make and print a spreadsheet with your name and class period at the top.

In your spreadsheet:

Sample for Assignment 3A:

- **create a data table** with columns labeled as shown. The x values should run from 0 to 15 in increments of 0.5. (Note: Learn\* how to use the "FILL→DOWN" option on the EDIT menu in Excel or OpenOffice so that you don't have to type in all the sequential values.)
- **create formulas** to make the computer calculate the y values shown in the table (columns B through E).
- **create a single graph** that shows the plot of TWO functions: columns B & E, i.e.,

*Printed directly from spreadsheet application*

A	B	C	D	E
x	y = 3x	y = 3x <sup>2</sup>	y = 3/x	y = 3 SQRT(x)
0.00	0.00	0.00	#DIV/0!	0.00
0.50	1.50	0.75	6.00	2.12
1.00	3.00	3.00	3.00	3.00
1.50	4.50	6.75	2.00	3.67
2.00	6.00	12.00	1.50	4.24
2.50	7.50	18.75	1.20	4.74
3.00	9.00	27.00	1.00	5.20
3.50	10.50	36.75	0.86	5.61
4.00	12.00	48.00	0.75	6.00
...	...	...	...	...
15.00	45.00	675.00	0.20	11.62

$$y = 3x \quad y = 3\sqrt{x}$$

using the graphing tool (known as "Chart Wizard") associated with the spreadsheet.

**\* How to "fill-down":**

After entering headings and **formulas**, select cell with formula & 30 cells below it.

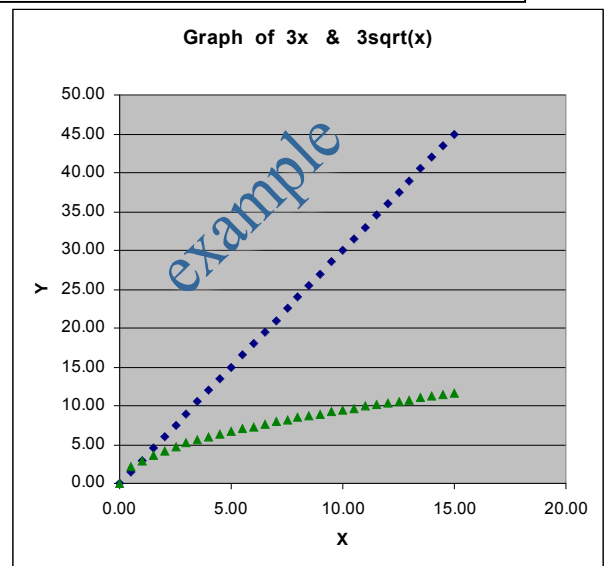
Then do:  
 Edit  
 ↓  
 Fill→Down

ROW labels	COLUMN labels	
	A	B
1	X	y = 3 x <sup>2</sup>
2	0.0	=3 * A2 * A2
3	=A2 + 0.5	
4		
5		
6		

headings you enter so you'll know what each column means... you can use ^ for the exponent

formula you enter so computer will calculate for you

This is what your graph from **3A** should look like: →



**3B: Make a word-processed document that includes a graph, a table, and a picture**

- Enter the data given in the “Summer Data” table below into a spreadsheet. (Not 3A’s sheet)
- Graph it on the spreadsheet using the techniques from 3A.
- Cut and paste the table and graph into a word-processed document formatted as in ►EXAMPLE◀  
*Suggestion: make an empty text box\* in the word processor document then paste the spreadsheet table or graph into that empty text box. This way you can move the textbox around to anywhere you want it on the page.*

Summer Data:

X	Y
15.5	63
19.5	111
22.0	159
22.0	163
23.3	191
24.0	201
25.3	244
29.2	391
45.1	1480
45.7	1560
51.5	2300
55.1	2810

The paper you turn in for 3B should look something like this.

►EXAMPLE◀

<your name>  
A.S. Physics  
Summer Homework

This is my summer homework assignment. The data displayed in Table 1 below is graphed in Figure 1.

Table 1: Summer Data

X	Y
...	...
...	...
...	...

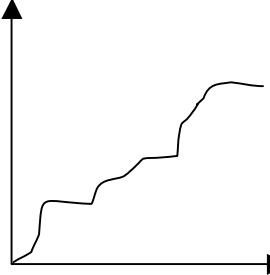



Figure 1: Graph of Summer Data



- Take a picture with your cell phone or digital camera. (Don’t have either? Then get a picture from Google Images or Facebook, etc.) Paste the picture into a text box in the lower left corner of the word processing page. We’ll use this skill when you need to insert a sketch or a complicated equation in your lab reports.

⇒ **Print your word processed example (data table, graph, and picture).**  
**Make sure it contains the name and title info at the top.**

You should have 2 pieces of paper when you’re done. Don’t wait until the last minute to get started on this. It’s easier to stay ahead than to play “catch up”.

See you in August...

Mr. DeCurtins

email: [jdecurti@seq.org](mailto:jdecurti@seq.org)

**Video Help for this Assignment:**

*Sometime around July I will post a link to a narrated video of me doing the summer assignment (i.e., showing how to use OpenOffice and Excel). The link will be posted on our class web page: <https://sites.google.com/a/menloathertonhs.com/jdecurtins/>*

