You can also use excel for your calculations. Lets look at some of the calculations from the first lab and see how excel can help.

We can make a table of the measurements we need and add a row that demonstrates how the calculations are done as shown below in row 2. This allows you to show how you do the calculations. You can also copy and paste from excel to word to turn in your lab writeup.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| row 1 | mass | length 1 | length 2 | length 3 | average length | standard deviation length | SEOM length |
| row 2 |  | l1 | l2 | l3 | la=(l1+l2+l3)/(n=3) | sd=[(l1-la)^2 + (l2-la)^2 + (l3-la)^2] / (n-1 = 3-1 = 2) | seom=sd/sqrt(n=3) |
| row 3 | 50 | 10.1 | 10.3 | 10.4 | 10.26666667 | 0.152752523 | 0.08819171 |
| row 4 | 70 | 13.2 | 13.5 | 13.3 | 13.33333333 | 0.152752523 | 0.08819171 |
| row 5 | 90 | 16.7 | 16.3 | 16.9 | 16.63333333 | 0.305505046 | 0.176383421 |

Another thing that is helpful is how to use excel to perform calculations that are not part of their functions. We are going to use a cylinder of radius 2.4 and length 21 to use in performing this calculation. To find the Volume use and to find the surface area use

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | A | B | C | D | E | F |
| 1 | r | L | pi | V=c1\*a1^2\*b1 | SA=2\*c1\*a1^2+2\*c1\*a1\*b1 |  |
| 2 | 2.4 | 21 | 3.141593 | 380.0070474 | 352.8636869 |  |
| 3 |  |  |  |  |  |  |
| 4 |  |  |  |  |  |  |

If we have one or more different radius and length, we can copy the formula down the column to calculate the volume and surface area for each new measurement.

For more information look at the tutorials under the help for excel, or go to You Tube and search for help on using excel to solve equations or do graphs. For instance try these searchs

Excel 2007: Use simple formulas to do the math

Excel 2007 – Creating and editing charts and graphs

Another good one is How to use a caliper