APPENDIX VII: AVERAGING, ROUNDING, PRECISION

1. What is the average of the following lengths in km?   52.2, 43.1, 53.8, 48.7, 47.6, 47.8, 50.3
  __49.1__ km
Average the numbers by first adding them together (343.5). Then divide that total by the total number of samples, which is 7. So, 343.5/7 = 49.071428. Now round to the tenth because that is the precision of the measurements. Rounded to the tenth, the answer is 49.1 km.

2. What is the average of the following volumes in ml? 27.87, 32.44, 21.59   __27.30___ ml
To obtain the average, we need to total the three samples and then divide that total by three. So, (27.87 + 32.44 + 21.59) / 3 = 81.90 / 3 = 27.30 ml. A calculator does not show the 0 in the hundredth position, but it should be in your final answer since acknowledges the precision of your answer.

3. Round the following to the hundredths (i.e., 0.01):
a. 6.558→6.56   The second 5 is rounded up to 6 because of the 8 in the thousandth position.

b. 4.50000→4.50   Must remove the extra zeros so that there is just the one in the hundredth position.

c. 3.2→3.20   As in Problem 2, we have to show the 0 in its hundredth place to clarify the precision.

d. 0.555→0.56 It's your choice to round up or down with exactly 5 in the thousandth position; however, round the opposition way the next time you encounter rounding with an exact 5.

e. 8.785→8.78 Since the previous rounding with a 5 was rounded up, this was rounded down.

f. 9.871→9.87 Round down by eliminating the 1 in the thousandth position.