Introduction to Natural Science, Fall 2006
Chemistry Workshop – Week 2

1. The average human body temperature is 98.6 °F. Convert this to °C and Kelvin units.
2. "Room temperature" is defined at 25 °C. Convert this to °F and Kelvin units.
3. The melting point of gallium, which is a metallic element, is 29.8 °C. Convert this to °F and Kelvin units. Determine the phase of gallium at room temperature and at body temperature.
4. What temperature reading is the same on the Celsius and Fahrenheit scales?
5. Express the following numbers in exponential notation (scientific notation) and determine the number of significant figures.

Number	Scientific notation	Significant figures
23		
203.		
100.00		
0.002870		
1219.285		
200		

6. Carryout the following mathematical manipulations and express the answer in the correct number of significant figures. Follow the given example.

Example:

2.93	3 sig. figs.	
+ 1.609	4 sig. figs	
4.539	4 sig figs	Answer must be to 3 sig figs. Answer is 4.54

0.2493/ 0.012 =

23.5 x 200 =

$$\frac{0.125\ (279.56\ +\ 13.6)}{98.15} =$$

7. Carryout the following unit conversions.

Starting unit	Desired unit
50 g	kg
3612 inches	yards
273 cm	m
1235 m	mm
60 m/hr	km/s
If the length of a square is 2.5 cm, what is the area?	

8. Diamond has a density of 3.513 g/cm^3. The mass of diamond is often measured in "carats", where 1 carat = 0.200g. What is the volume (in cm^3) of a 1.50 carat diamond?