Name:_____

Student #:_____

CHEM 1101 Assignment: Unit Conversion and Significant Figures

Submit Hand-Written Solutions

1. Carry out the following conversions (are all measured values):
   a. 44 729 J to kJ :

   b. 421.6 nm to m :

   c. 1.3188×10^{-27} kg to g :

   d. 172 kJ to J :

   e. 4.3×10^{6} nm to m :

   f. 94.9 kg to mg :

   g. 7.13 µg to kg :

2. Given the conversion factors:

   101 625 Pa = 1 atm
   14.70 psi = 1 atm
   2.54 cm = 1 inch
   6.02×10^{23} = 1 mol
   K = °C + 273
   1000 L = 1 m^3

   Convert the following:
   a. 1.05 atm to Pa :

      kPa :

      psi :

   b. 3.8×10^{6} Pa to atm :

   c. 42 L to m^3 :

   d. 74°C to K :

   e. 393 K to °C :

   f. 18.92 inches to m :

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3. Complete the following calculations – assume that all values are measured, unless the question specifies otherwise (this means your answers must have the correct sig. figs.)
   Show your answer in both standard notation and scientific notation.

   a. $\frac{574}{(28)(32)} =$

   b. $\frac{23}{(2.4)(-8.6)} =$

   c. $\frac{(580. - 540.)}{20.} =$

   d. $(5.70 \times 10^5)(6.24 \times 10^8) =$

   e. $\frac{12\ 628}{(7.40 \times 10^{-2})(9.02 \times 10^{-4})} =$

   f. log (0.045) =

   g. log (-0.045) =

   h. ln (0.045) =

   i. ln (4.50×10^{-2}) =

   j. log x = -1.3468; x =

   k. ln x = 12.95; x =

   l. $\frac{327\ 421}{8.314}\left(\frac{3.46}{395} - \frac{184}{296}\right) =$