**Chem 200 Workshop**

**CONVERSIONS AND NOMENCLATURE**

1. Perform the following conversions:
2. 0.076 L to mL; b) 5.0x 10-8 m to nm; c) 6.88 x 105 ns to s; d) 1.55 kg/m3 to g/L; e) 5.850 gal/h to L/s
3. The density of air at ordinary atmospheric pressure and 25°C is 1.19 g/L. What is the mass, in kilograms, of the air in a room that measures 12.5x15.5x8.0 ft?
4. A cylindrical container of radius *r* and height *h* has a volume of π*r2h*.
5. Calculate the volume in cubic centimeters of a cylinder with a radius of 3.55 cm and a height of 75.3 cm.
6. Calculate the volume in cubic meters of a cylinder whose height is 22.5 in. and whose diameter is 12.9 in.
7. Calculate the mass in kilograms of a volume of mercury equal to the volume in the cylinder in part b. The density of mercury is 13.6 g/cm3.
8. Fill in the gaps in the following table, assuming each column represents a neutral atom.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Symbol | 52Cr |  |  |  |  |
| Protons |  | 33 |  |  | 77 |
| Neutrons |  | 42 | 20 |  |  |
| Electrons |  |  | 20 | 86 |  |
| Atomic # (Z) |  |  |  |  |  |
| Mass # (A) |  |  |  | 222 | 193 |

1. Naturally occurring magnesium has the isotopic information listed in the table below. What is the average atomic mass of Mg?

|  |  |  |
| --- | --- | --- |
| Isotope | Abundance | Mass |
| 24Mg | 78.99% | 23.98504 |
| 25Mg | 10.00% | 24.98584 |
| 26Mg | 11.01% | 25.98259 |

1. Name the following compounds:

a) AlF3; b) Fe(OH)2; c) Cu(NO3)2; d) Ba(ClO4)2; e) Li3PO4; f) Hg2S; g) Ca(C2H3O2)2; h) Cr2(CO3)3; i) K2CrO4; j) (NH4)2SO4; k) HBrO3; l) HBr; m) H3PO4; n) H2C2O4;

o) H2SO3; p) N2O; q) NO; r) N2O5; s) N2O4 t) Hg2CO3 u) V2S5

1. Write the formulas for the following compounds:
2. Potassium dichromate; b) cobalt(II) nitrate; c) Hypochlorous acid;

d) Chromiuim (VI) acetate; e) Iodic acid; f) Sodium hydride;

g) Tetraphosphorous hexasulfide; h) Calcium hydrogen carbonate; i) Hydrobromic acid;

j) Barium bromate; k) Hydrogen cyanide; l) Copper (II) perchlorate;

m) Nitrous acid; n) Sulfur hexafluoride; o) Carbonic acid;

p) Zing oxalate; q) Aluminum hypoiodite; r) Mercury(I) bromide