

Chem 1014

In-Class Problem Set #8

InClass for the week of October 11, 1999

Fall 1999

Name _____

TA Name _____

Lab Section # _____

1. Calculate the number of atoms in each of the following;

a) 196 u N

b) 3.994×10^{-22} g calcium
(mass of Ca atom is 6.657×10^{-23} g)

2. Calculate the mass, in grams, of one atom of;

a) boron

b) lead

3. How many atoms in each of the following;

a) 12.011 g carbon

b) 65.39 g Zn

c) 36.033 g carbon

d) 21.8 g Zn

e) 4.56×10^{-4} g carbon

f) 5.10×10^5 g Zn

4. How many moles in each of the following;

a) 1.00794 g helium

b) 32 g oxygen molecules

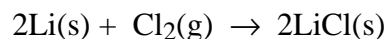
c) 44.0 g CO₂

d) 145 g NaCl

e) 5.10×10^{23} Ar atoms

b) 8.45×10^{22} H₂S molecules

5a. How do you read the following equation?



b) How many molecules of chlorine are required to react with 16 atoms of lithium? (show your work)

c) How many atoms of lithium will react with 120 molecules of chlorine? (show your work.)

d) How many formula units of lithium chloride are formed in b)? In c)? (show your work)

e) How many formula unit of lithium chloride can be formed when 24 atoms of lithium are combined with 10 molecules of chlorine? Explain.