**Homework #9 Chemistry 1114 section 2 (Fong) due Monday 19 Oct 2017 6 pts (in class) Show your work !!**

**Your name:\_\_\_\_\_\_answers\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**MW(g/mol): 44 32 44 18**

**Given the balanced equation: C3H8 + 5O2 🡪 3CO2 + 4H2O**

**1) How many grams of O2 are burned if 0.0375 mol of CO2 are produced?**

**Mol O2/Mol CO2 = 5/3= m(O2)/0.0375**

**0.0375\*5/3= m(O2)=0.0625 mol O2**

**0.0625 mol O­2\* 32 g O2/mol O2=2 g**

**\_\_\_2\_\_ g O2**

**2) How many grams of C3H8 are burned to produce 9 g CO2 ?**

**9 g CO2/44 g mol-1 CO2 =0.204545 mol CO2**

**Mol C3H8/mol CO2 = 1/3= m(C3H8)/0.204545**

**0.204545\*1/3=0.0618181 mol C3H8**

**0.06818 mol C3H8 \*44 g C3H8/mol C3H8=**

**\_\_\_3\_\_\_ g C3H8**

**3) How many molecules of CO2 are produced when we burn 2.444 g C3H8 ?**

**2.444 g C3H8/44 g C3H8 mol-1 = 0.0555 mol C3H8**

**Mol CO2/mol C3H8= 3/1=x(mol CO2)/0.0555**

**0.0555\*3/1= x(mol CO2) =0.16666 mol CO2**

**6\*1023 molecules CO2/mol CO2 \* 0.16666 mol CO2 ~ 1\*1023 molecules CO2**

**\_\_\_\_1\*1023\_\_\_\_ molecules CO2**