**Mole HomeWork 6**

**Your name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_/6**

 **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**