**Mole HomeWork 7**

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

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

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

**1) How many grams of CO2 are created if 0.18939 mol of O2 and 0.0757 mol of C3H8 are burned ?**

**0.18939 mol O2 \* 3 mol CO2/5 mol O2 = 0.1136 mol CO2 limits**

**0.0757 mol C3H8 \* 3 mol CO2/1 mol C3H8= 0.2271 mol CO2**

**0.1136 mol CO2 \* 44 g/mol CO2=5 g**

**\_\_5\_\_\_ g CO2**

**2) How many grams of H2O are created if 4.1666\*1023 molecules of C3H8 and 22.22 g**

**of O2 are burned ?**

**4.1666\*1023/6.0\*1023 =0.694 mol C3H8 22.22 g O2/32 g mol‑1= 0.6875 mol O2**

**0.694 mol C3H8\*4 mol H2O/1 mol C3H8=2.776 mol H2O**

**0.6875 mol O2 \* 4 mol H2O/5 mol O2=0.55 mol H2O limits**

**0.55 mol H2O \* 18 g/mol = 10 g**

**10 g H2O**

**3) Ethanol, C2H5OH is drinking alcohol. It burns in your body according to the**

**balanced equation below:**

**MW(g/mol): 46 32 44 18**

**C2H5OH + 3O2 🡪 2CO2 + 3H2O**

**Friday night you drink 92 g of ethanol and from that you create 81 grams of water in your urine after an hour. What is the % yield (efficiency) of your body in metabolizing ethanol ?**

**92 g ethanol/46 g mol‑1 = 2 mol ethanol=> 2\*3/1 mol H2O max=6 mol=>6\*18=108 g**

**81 g H2O actual=> 100\*81/108= 75%**

**\_\_\_\_\_75\_\_\_\_\_\_ % efficiency (yield) of body to**

**burn ethanol**