**SI WORKSHEET 6**

1. CaCO3🡪 CaO + CO2
	1. If 150 grams of the **product with Calcium** was produced how many grams of CaCO3 did you start with?

$\frac{150 g CaO}{}x\frac{1 mol}{56 g CaO}x\frac{1 mol CaCO3}{1 mol CaO}x\frac{100 g CaCO3}{1 mol CaCO3}$= 268 g CaCO3

1. C10H20 + 15O2 🡪 10CO2 + 10H2O.
	1. If $9.87 x 1021 molecules$ of Oxygen are present, how many grams of CO2 is produced?

$\frac{9.87 E21 molecules }{}x\frac{1 mole oxygen}{6.022E23}x\frac{10 moless CO2}{15 mole oxygen}x\frac{44 g CO2}{1 mole CO2}$= 0.48 g CO2

1. 2C10H18 + 29 O2 🡪 20CO2 + 18H2O
	1. If 50 grams of cyclodecene are reacted with excess oxygen how much of each product is produced in grams? If the reaction had a 75% yield, how many grams of each product was actually produced?

$\frac{50 g C10H18}{}x\frac{1 mole C10H18}{138 g C10H18}x\frac{20 mole CO2}{1 mole C10H18}x\frac{44 g CO2}{1 mole CO2}$= 318g CO2\*.75 = 239 g

$\frac{50 g C10H18}{}x\frac{1 mole C10H18}{138 g C10H18}x\frac{18 mole H2O}{1 mole C10H18}x\frac{18 g H2O}{1 mole H20}$= 117.4 g H2O \*.75=88 g

1. Al2(SO4)3 + NaClO4 🡪
	1. If 100 grams of each reactant is present, how much of the excess reagent remains at end of reaction? How much of each product is produced (in grams) if there’s a 70% yield?

$\frac{100 g NaClO4}{}x\frac{1 mole NaClO4}{122.5 g NaClO4}x\frac{2 mole Al\left(ClO4\right)3}{6 mole NaClO4}x\frac{325.5 gAl\left(ClO4\right)3}{1mol Al\left(ClO4\right)3}$= Ty=88.6 g Al(ClO4)3\*.7=Ay=62 g

$\frac{100 g NaClO4}{}x\frac{1 mole NaClO4}{122.5 g NaClO4}x\frac{3 mole Na2SO4}{6 mole NaClO4}x\frac{142 g Na2SO4}{1mol Na2SO4}$= Ty= 58 g Na2SO4\*.7= Ay=40.6 g produced

1. C6H12O6 + C2H5OH 🡪 C8H16O6 + H2O 5-6 ON NEXT SI SHEET!!
	1. If there are 20 ml of ethanol and 50 grams of glucose, how many water molecules can you produce? (density of ethanol =0.789 g/ml)
2. CaC2O4 + Na3PO4 🡪
	1. A student performs this reaction with 75 grams of Calcium oxalate and 125 g of Sodium phosphate and produces 45 g of the calcium-containing product and the student determines the percent yield to be 65%. Is the student correct? If not, what should the student have received for percent yield?