# Stoichiometry: Mass – Mole Worksheet

Solve the following stoichiometry problems and type in the correct answer with units. (for example: 3.45 mol or 4.62 g) Round the masses from the periodic table to the nearest whole number. Round all answers to 2 decimal places.
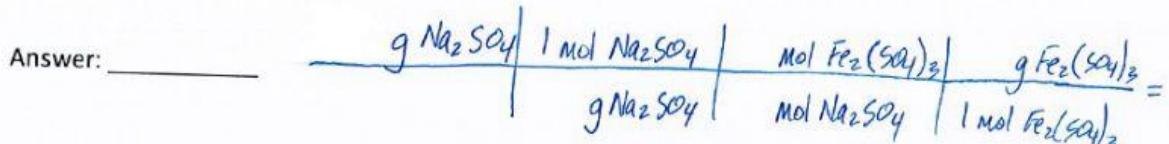
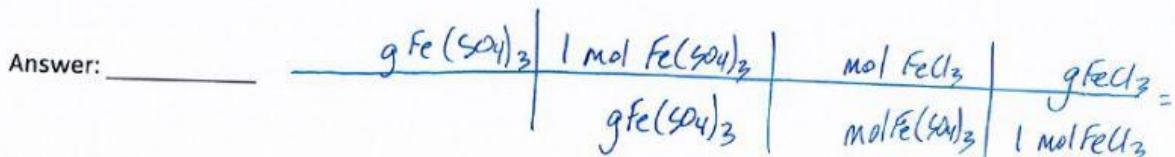1. Based on the following chemical equation, please answer the following questions

$$Fe(SO_4)_3 + 6\,NaCl \rightarrow 2\,FeCl_3 + 3\,Na_2SO_4$$

a. Calculate the amount of moles of NaCl needed to produce 75 g of $FeCl_3$.

Answer: _____

$$\frac{g\,FeCl_3}{} \left| \frac{1\,mol\,FeCl_3}{g\,FeCl_3} \right| \frac{mol\,NaCl}{mol\,FeCl_3} =$$
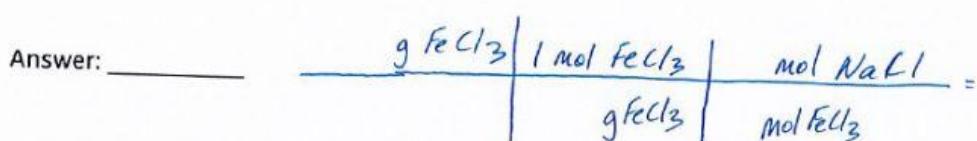
b. Calculate the amount of $Fe_2(SO_4)_3$ in grams produce 215 g Na_2SO_4.

Answer: _____

$$\frac{g\,Na_2SO_4}{} \left| \frac{1\,mol\,Na_2SO_4}{g\,Na_2SO_4} \right| \frac{mol\,Fe_2(SO_4)_3}{mol\,Na_2SO_4} \left| \frac{g\,Fe_2(SO_4)_3}{1\,mol\,Fe_2(SO_4)_3} \right| =$$

c. Calculate the amount in grams of $FeCl_3$ produced with 95g of $Fe(SO_4)_3$.

Answer: _____

$$\frac{g\,Fe(SO_4)_3}{} \left| \frac{1\,mol\,Fe(SO_4)_3}{g\,Fe(SO_4)_3} \right| \frac{mol\,FeCl_3}{mol\,Fe(SO_4)_3} \left| \frac{g\,FeCl_3}{1\,mol\,FeCl_3} \right| =$$

d. Calculate the amount of moles of $Fe_2(SO_4)_3$ needed to react with 123.5 g of NaCl.

Answer: _____

$$\frac{g\,NaCl}{} \left| \frac{1\,mol\,NaCl}{g\,NaCl} \right| \frac{mol\,Fe_2(SO_4)_3}{mol\,NaCl} =$$
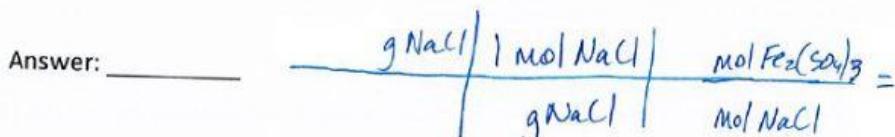
2. How many moles of $CaCO_3$ can be produced if we make 12.3 g of $Ca(HCO_3)_2$ reacts with $CaCO_3$?

$$Ca(HCO_3) + Ca(OH)_2 \rightarrow 2\,CaCO_3 + 2\,H_2O$$

Answer: _____

$$\frac{g\,Ca(HCO_3)_2}{} \left| \frac{1\,mol\,Ca(HCO_3)_2}{g\,Ca(HCO_3)_2} \right| \frac{mol\,CaCO_3}{mol\,Ca(HCO_3)_2} =$$