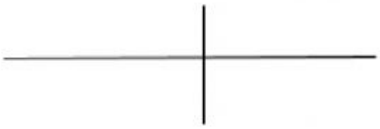
Name:
Stoichiometry

1. ___ **Fe** + ___ **O_2** → ___ **Fe_2O_3**

a) How many **moles** of iron would be needed to react with 3.82 **moles** of oxygen?



= mol Fe

b) What **mass** of iron (III) oxide can be produced from 13.5 **moles** Fe?

= g Fe_2O_3

c) How many **moles** of O_2 are needed to produce 34.7 **g** of Fe_2O_3?

= mol O_2

d) What **mass** of iron (III) oxide can be produced from 135 **g** Fe?

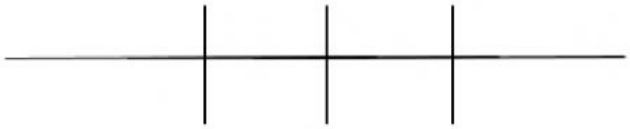
= g Fe_2O_3

2. ____ **C_4H_{10}** + ____ **O_2** ---> ____ **CO_2** + ____ **H_2O**

a) When 0.624 **moles** of O_2 are reacted, how many **moles** of carbon dioxide are produced?

= mol CO_2

b) How many **grams** of C_4H_{10} would produce 88 **grams** of water?



= g C_4H_{10}

0.624 mol O_2	88 g H_2O
10 H_2O	58.14 g
13 O_2	44.01 g
2 C_4H_{10}	32.00 g
8 CO_2	18.02 g
1 mole	6.022E23
1 mole	

3. **____$KClO_3$ ____KCl + ____O_2**

a) When 62.0 **g** of Potassium chlorate decomposes, how many **moles** of KCl will be formed?

= mol KCl

b) How many **grams** of O_2 are produced from the decomposition of 2.85 **moles** of $KClO_3$?

= g O_2

c) If 3.54 **g** of oxygen was produced. What **mass** of potassium chlorate was used?

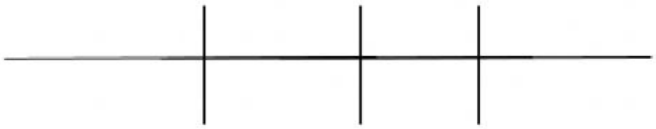
= g $KClO_3$

4. **$4\ NH_3 + 7\ O_2 \rightarrow 4\ NO_2 + 6\ H_2O$**

a) What **mass** of NO_2 can be produced from 8.46×10^{22} **molecules** of oxygen?

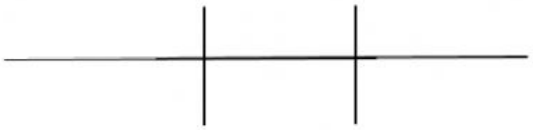
= g NO_2

b) 23.7 **g** of NH_3 could produce how many **molecules** of H_2O?



= H_2O molecules

c) How many **moles** of NH_3 are needed to react completely with 9.5 **g** of oxygen?



= mol NH_3

$4\ NH_3$	**$7\ O_2$**
$4\ NH_3$	**$7\ O_2$**
$4\ NO_2$	**$6\ H_2O$**
8.46×10^{22} **molecules O_2**	
6.022×10^{23} **molecules**	
1 mole	17.04 **g**
1 mole	46.01 **g**
1 mole	18.02 **g**
1 mole	32.00 **g**
1 mole	23.7 **g** NH_3
	9.5 **g O_2**