Name:
Stoichiometry

1. ____$KClO_3$ ____KCl + ____O_2

a) When 620. **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 $KClO_3$

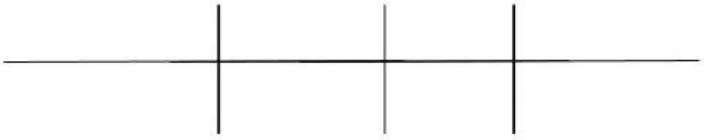
$\frac{2\ KClO_3}{2\ KCl}$ $\frac{2\ KCl}{2\ KClO_3}$ $\frac{2\ KCl}{3\ O_2}$ $\frac{3\ O_2}{2\ KCl}$ $\frac{3\ O_2}{2\ KClO3}$ $\frac{2\ KClO_3}{3\ O_2}$

620. g $KClO_3$ 3.54 g O_2 2.85 mol $KClO_3$

$\frac{122.55\ g}{1\ mole}$ $\frac{1\ mole}{122.55\ g}$ $\frac{32.00\ g}{1\ mole}$ $\frac{1\ mole}{32.00\ g}$ $\frac{74.55\ g}{1\ mole}$ $\frac{1\ mole}{74.55\ g}$

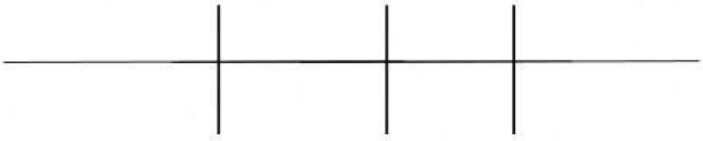
2. **$4\ NH_3 + 7\ O_2 \dashrightarrow 4\ NO_2 + 6\ H_2O$**

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



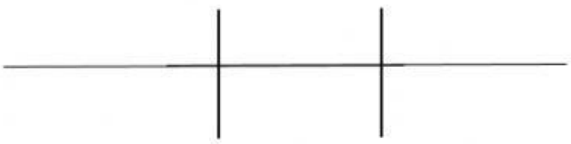
= g NO_2

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 with 95 **g** of oxygen?



= mol NH_3

8.46×10^{22} **molecules**

$\frac{6.022 \times 10^{23}\ \textbf{molecules}}{\textbf{1 mole}}$ $\frac{\textbf{1 mole}}{6.022 \times 10^{23}\ \textbf{molecules}}$

95 **g O_2**

23.7 **g** NH_3

$\frac{46.01\ g}{1\ mole}$ $\frac{1\ mole}{46.01\ g}$ $\frac{32.00\ g}{1\ mole}$ $\frac{1\ mole}{32.00\ g}$

$\frac{4\ NH_3}{7\ O_2}$ $\frac{7\ O_2}{4\ NH_3}$ $\frac{4\ NO_2}{7\ O_2}$ $\frac{7\ O_2}{4\ NO_2}$ $\frac{6H_2O}{4\ NH_3}$ $\frac{4\ NH_3}{6\ H_2O}$ $\frac{17.04\ g}{1\ mole}$ $\frac{1\ mole}{17.04\ g}$ $\frac{18.02\ g}{1\ mole}$ $\frac{1\ mole}{18.02\ g}$

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