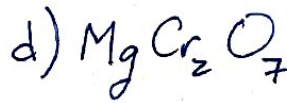
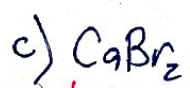
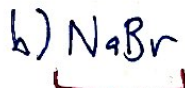


# AP Unit 1 Test Review Kahoot Key

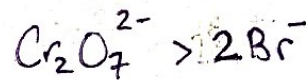
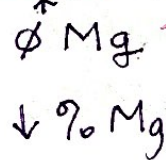
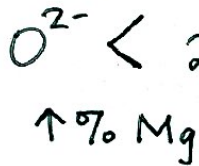
#1) impure  $MgBr_2$  16% Mg, pure  $MgBr_2$  13%

⇒ impure ↑% Mg than pure

⇒ Contaminant = ↑% Mg than  $MgBr_2$



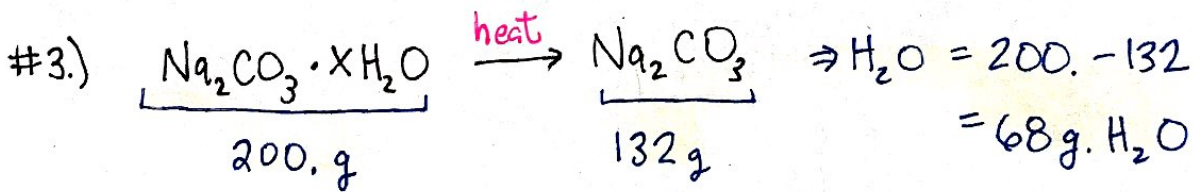
consider relative masses



#2) ~~750 mL  $H_2O$~~ ,  $2.3 \times 10^{24}$  ions  $PO_4^{3-}$  ⇒ # mol  $Fe_3(PO_4)_2$  ?

irrelevant

$$2.3 \times 10^{24} \text{ ions } PO_4^{3-} \times \frac{1 \text{ mol } PO_4^{3-}}{6.022 \times 10^{23} \text{ ions } PO_4^{3-}} \times \frac{1 \text{ mol } Fe_3(PO_4)_2}{2 \text{ mol } PO_4^{3-}} = 1.9 \text{ mol } Fe_3(PO_4)_2$$



$$\left. \begin{array}{l} Na_2CO_3: 132 \text{ g} \times \frac{1 \text{ mol}}{106 \text{ g}} = 1.25 \text{ mol} \\ H_2O: 68 \text{ g} \times \frac{1 \text{ mol}}{18 \text{ g}} = 3.78 \text{ mol} \end{array} \right\} \div 1.25 \begin{array}{l} = 1 \\ = 3 \end{array}$$

4.) 273K, 760 torr = STP!  $PV = nRT \Rightarrow n = \frac{(760 \text{ torr})(14.1 \text{ L})}{(62.36)(273 \text{ K})} = 0.629 \text{ mol}$

$\Rightarrow$  shortcut:  $14.1 \text{ L} \times \frac{1 \text{ mol}}{22.4 \text{ L}} \times \frac{4 \text{ g}}{1 \text{ mol}} = \boxed{2.5 \text{ g He}}$   $\leftarrow \times \frac{4 \text{ g}}{1 \text{ mol}}$

#6.) Al: 0.67 mol  $\left[ \begin{array}{l} = 1 \\ \div 0.67 \end{array} \right] \times 2 = 2$   
 Br: 1.7 mol  $\left[ \begin{array}{l} = 2.5 \\ \div 0.67 \end{array} \right] \times 2 = 5$

#8.)  $4.0 \text{ mol C-14} \times \frac{6.022 \times 10^{23} \text{ atoms C-14}}{1 \text{ mol C-14}} \times \frac{8 n^{\circ}}{1 \text{ atom C-14}} = \boxed{1.9 \times 10^{25} n^{\circ}}$

mass = 14 =  $p^+ + n^{\circ}$

C = 6  $p^+$

14 - 6 = 8  $n^{\circ}$

#9.)  $\text{H}_2\text{O} = 15.0 \text{ g} - 11.7 \text{ g}$   
 $= 3.3 \text{ g H}_2\text{O}$   
 $\left. \begin{array}{l} \text{\% H}_2\text{O} \\ = \frac{3.3}{15.0} \times 100 \\ = \boxed{22\%} \end{array} \right\}$