Given the reaction: $CaCl_2\ (aq) + Na_2C_2O_4\ (aq) \rightarrow CaC_2O_4\ (s) + NaCl\ (aq)$

a) If 0.043g of oxygen was produced, how many grams of chlorine reacted?

b) How many moles of $CaCl_2$ reacted?

c) How many moles of NaCl were produced if 4.39g of $Na_2C_2O_4$ reacted?

STEP 1: Make sure the equation is balanced!

The equation is not balanced. Adding a 2 in front of NaCl in the products yields:

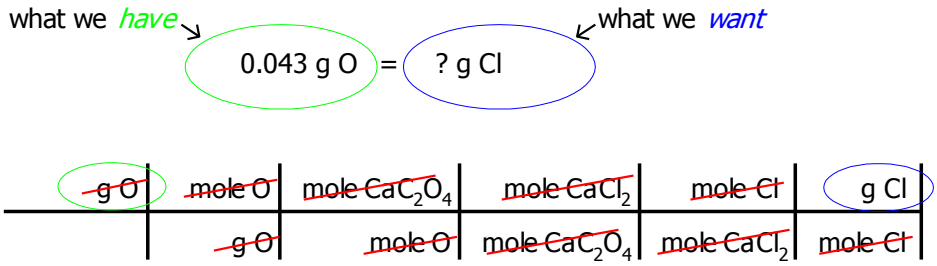
$$CaCl_2\ (aq) + Na_2C_2O_4\ (aq) \rightarrow CaC_2O_4\ (s) + 2\ NaCl\ (aq)$$

Ca	1		1	Ca
Cl	2		2	Cl
Na	2		2	Na
C_2O_4	1		1	C_2O_4

Now the equation has equal numbers of each atom in both reactants and products.

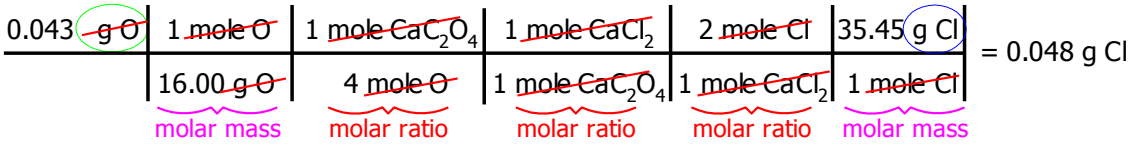
a) If 0.043g of oxygen was produced, how many grams of chlorine reacted?

STEP 2: Set up the units going from what we have to what we want.



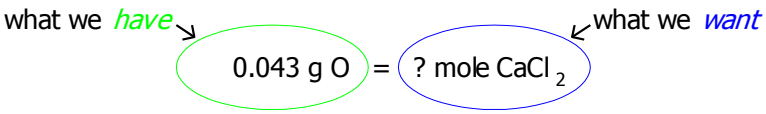
Cancel the units until the desired unit is the only one left.

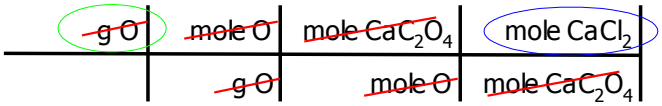
STEP 3: Calculate any molar masses (formula weights) needed and fill in the numbers using the balanced equation to find the molar ratios.



b) How many moles of $CaCl_2$ reacted?

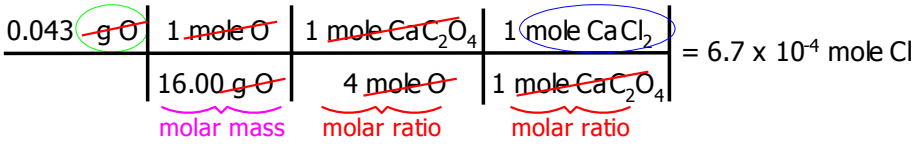
STEP 2: Set up the units going from what we have to what we want.





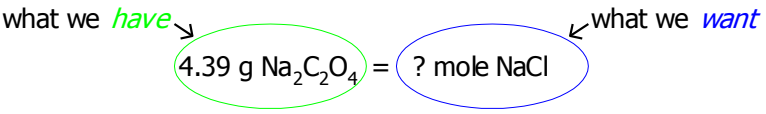
Cancel the units until the desired unit is the only one left.

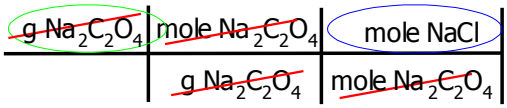
STEP 3: Calculate any molar masses (formula weights) needed and fill in the numbers using the balanced equation to find the molar ratios.



c) How many moles of NaCl were produced if 4.39g of $Na_2C_2O_4$ reacted?

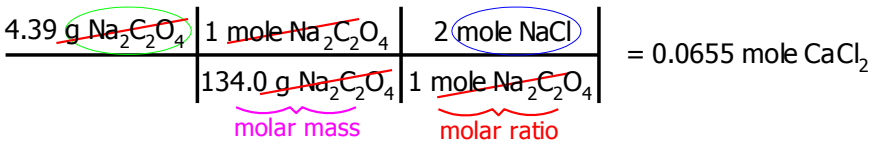
STEP 2:Set up the units going from what we have to what we want.





Cancel the units until the desired unit is the only one left.

STEP 3: Calculate any molar masses (formula weights) needed and fill in the numbers using the balanced equation to find the molar ratios.



The same basic steps work for all three problems. Remember your significant figures!