

## Exercise #2

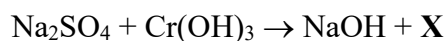
1) Write the formulas and balance the equations:

- Zinc Sulfide + Oxygen = Zinc Oxide + Sulfur Dioxide
- Potassium Chlorate = Potassium Chloride + Oxygen
- Hydroiodic Acid + Sulfuric Acid = Sulfur Dioxide + Water + Iodine ( $I_2$ )
- Tin + Nitric Acid = Tin Oxide + Nitrogen Dioxide + Water

2) Write the formulas and balance the following reactions after completing them with the reactants or products.

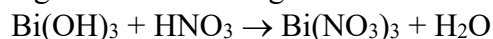
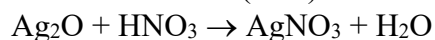
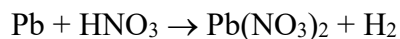
- Sulfur Dioxide + Water = .....
- Dichlorine pentoxide + Ferrous Oxide = .....
- ..... = Potassium Nitrate + Water
- ..... = Sulfuric Acid

3) Given the following reaction:



- Complete the transformation by identifying the formula of compound **X**, and balance the chemical equation.
- Assign the appropriate name to each species present in the chemical equation.
- How many grams of compound **X** are formed from 12 grams of  $Na_2SO_4$ ? How many grams of  $Cr(OH)_3$  are needed to complete this transformation?  
(Atomic weights: Na=23; Cr=52; H=1; S=32; O=16) [11.04 g of X; 5.80 g of  $Cr(OH)_3$ ]

4) Given the following reactions (to be balanced):



Calculate how many grams of nitric acid ( $HNO_3$ ) are needed in the three cases to obtain 200 g of the salt in each case, respectively,  $Pb(NO_3)_2$ ,  $AgNO_3$  e  $Bi(NO_3)_3$ .  
[76.10 g; 74.17 g; 95.71 g]