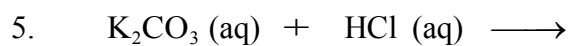
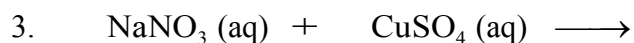
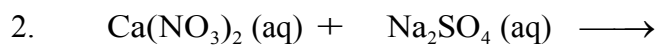
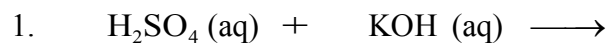


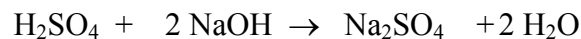
Test 3 Review

For each reaction below:

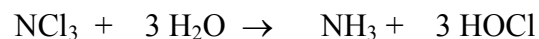
- Predict the products, and write a balanced molecular equation.
- If no reaction occurs, write “No Reaction” after the arrow.
- For precipitation reactions, identify the precipitate, and write a *net ionic equation*.



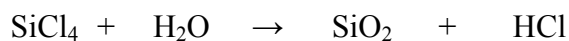
7. Calculate the number of moles of NaOH that are needed to react with 500.0 g of H₂SO₄ according to the following equation:



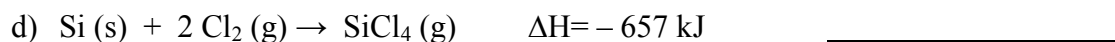
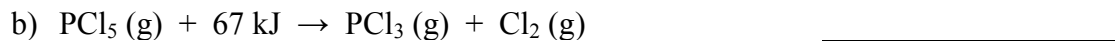
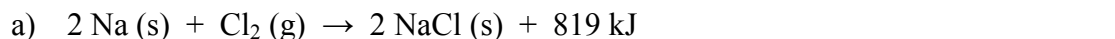
8. Calculate the mass of NH₃ that can be produced from the reaction of 125 g of NCl₃ according to the following equation:



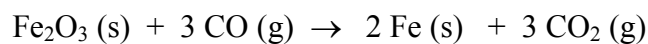
9. Silicon dioxide (SiO₂) can be produced by the unbalanced reaction shown below in 85.0% yield. In one experiment 155 g of SiCl₄ are completely reacted with excess water. How many grams of SiO₂ are actually produced in this reaction?



10. Classify each of the reactions below as exothermic or endothermic:



11. Iron (III) oxide reacts with carbon monoxide as shown below:



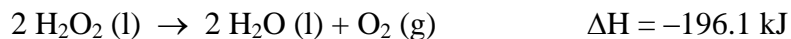
A reaction mixture initially contains 22.55 g of Fe_2O_3 and 14.78 g of CO . Once the reaction has occurred as completely as possible, what mass (in grams) of the excess reactant is left?

12. PCl_3 reacts with water to form HCl and aqueous H_3PO_3 .

a) Write a balanced equation for this reaction.

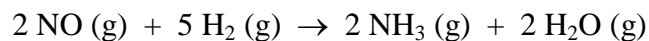
b) Calculate the percent yield of a reaction in which 200.0 g of PCl_3 react with excess water to form 128 g of HCl .

13. Liquid hydrogen peroxide is used in many rocket fuel mixtures because it produces oxygen gas on decomposition, as shown below:



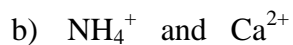
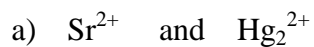
How much heat is released when 732 kg of H_2O_2 is decomposed?

14. Consider the reaction shown below:



A reaction mixture initially contains 5 mol NO and 10 mol of H_2 . Determine the moles and identity of all substances present in the mixture after all the reaction has taken place.

15. What solution can be added to the mixture of each of the ions listed below to precipitate one while keeping the other in solution?



ANSWERS:

- 1-6) No Answers provided
- 7) 10.20 mol NaOH
- 8) 17.7 g NH₃
- 9) 46.6 g SiO₂
- 10a) Exothermic
- 10b) Endothermic
- 10c) Endothermic
- 10d) Exothermic
- 11) 2.91 g of CO
- 12) 80.3% yield
- 13) 2.11x10⁶ kJ
- 14) 1 mol NO; 4 mol NH₃; 4 mol H₂O