**Stoichiometry and Reaction Prediction Quiz – Honors**

Use the equation below to answer the following questions:

Fe2O3 + 3 SO3 → Fe2(SO4)3

1. What type of chemical reaction is this? (1 pt) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Given your knowledge of this type of reaction, would the reaction above actually occur? Explain why or why not. (2 pt)
3. Let’s assume the reaction above actually takes place. If I were to perform this reaction with 85 grams of iron (III) oxide and 115 grams of sulfur trioxide, how many grams of iron (III) sulfate would I form? Show your work. (9 pt)
4. What is the limiting reagent in problem 3? (1 pt) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Predict the products of the following reactions, balancing them if necessary. Indicate if no reaction occurs: (3 pt each)

1. H2SO4 →
2. Na + Br2 →
3. ZnS + LiOH →
4. HBr + Ba(OH)2 →