

Name: \_\_\_\_\_

Chem, Period: \_\_\_\_\_

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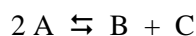
**Prelab Assignment: Chemical Equilibrium and Le Chatelier's Principle**

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1. Consider the reversible reaction:  $A + B \rightleftharpoons C + D$
- a. What happens to the forward and reverse reaction *rates* when equilibrium is achieved?
- b. What happens to the reactant (A and B) and product (C and D) *concentrations* when equilibrium is achieved?

2. Le Chatelier's Principle states that if a stress is applied to a reversible reaction at equilibrium, the reaction will undergo a shift in order to re-establish its equilibrium. Consider the following *exothermic* reversible reaction at equilibrium:



In which direction (left or right) would the following stresses cause the system to shift?

- a. decrease the concentration of A \_\_\_\_\_
- b. increase the concentration of B \_\_\_\_\_
- c. lower the temperature \_\_\_\_\_

3. In this lab you will explore the effect of Le Chatelier's Principle on several chemical systems at equilibrium. These are supplied on page 2 of the Theory Section. Consider the *third* system you will study: the Aqueous Ammonia Solution. The side with the ammonium ions will be a pink color.

- a. Write the balanced equation for this reversible reaction.

\_\_\_\_\_

- b. Suppose you added some excess ammonium ions to this system at equilibrium.

-- In which direction would a shift occur? \_\_\_\_\_

-- What color change might you expect to observe? \_\_\_\_\_

4. List all the equipment you will use in this lab.