

Names: _____

Chem 120/ Dr. Rusay

Group Equilibrium Prelab Form

1. a. Record the respective number of red and blue spheres:

	5 s	10 s	15 s	20 s	3 min
Red					
Blue					

- b. At the instant the reaction begins, what is the rate of the reverse reaction, that of **B** going to **A**? Explain in the context of a microscopic view of the collisions of molecules.
- c. How does the rate of change in A compare to B from 0 to 10 sec?
1) increases 2) equals 3) decreases
- d. How does the rate of change in A compare to B from 1 to 3 minutes?
1) increases 2) equals 3) decreases

True/False

At time = 0 seconds:

- | | |
|--|-------|
| e. The rate of the forward reaction exceeds the rate of the reverse reaction. | T / F |
| f. The rate of the reverse reaction exceeds the rate of the forward reaction. | T / F |
| g. For a period of ~20 sec. after initial mixing, the concentration of the products increases. | T / F |
| h. For a period of ~20 sec after initial mixing, the concentration of the reactants increases. | T / F |

At equilibrium:

- | | |
|---|-------|
| i. The rate of the forward reaction is zero. | T / F |
| j. The rate of the reverse reaction is zero. | T / F |
| k. The rate of the forward reaction is equal to the rate of the reverse reaction. | T / F |
| l. The rates of the forward and reverse reactions are both constant. | T / F |

2. Write the equilibrium expression for the reaction.

Using the equilibrium concentrations in question #1 calculate Kc.

3. Record the respective number of red and blue spheres at 3 min. Red: _____ Blue: _____

Calculate Kc.

4. Record the respective number of red and blue spheres at 3 min. Red: _____ Blue: _____

Calculate Kc.

5. Kc average _____ Kc average deviation _____

What do you conclude about different starting concentrations and Kc.

PART II: <http://www.chm.davidson.edu/ronutt/che115/equkin/equkin.htm>

1.

Red _o	Blue _o	Red _{eq}	Blue _{eq}	T (Kelvin)	Kc
80	0			298	
80	0			380	

2. In what way are the two plots (#1 and #2) similar, how do they differ?

3. Is this reaction exothermic or endothermic? Briefly explain the reasons for your selection.