

Name: _____ Date: _____ Per: _____

Chem/Honors Le Chatelier's Principle Lab Alternative

1. Describe Le Chatelier's Principle:

2. Use the word **right** or **left** for the following:

When the concentration of a reactant is increased, the equilibrium will shift _____.

When the concentration of a reactant is decreased, the equilibrium will shift _____.

When the concentration of a product is increased, the equilibrium will shift _____.

When the concentration of a product is decreased, the equilibrium will shift _____.

When the temperature of an endothermic reaction is increased, the equilibrium will shift _____.

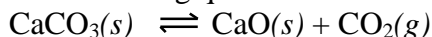
When the temperature of an endothermic reaction is decreased, the equilibrium will shift _____.

When the temperature of an exothermic reaction is increased, the equilibrium will shift _____.

When the temperature of an exothermic reaction is decreased, the equilibrium will shift _____.

Use the following to answer questions 3-5:

The following questions refer to the equilibrium shown here:



3. What would happen to the system if more CaCO_3 were added?

- A) More CaO would be produced.
- B) The concentration of $\text{CO}_2(g)$ would decrease.
- C) The amount of CaCO_3 would decrease.
- D) The pressure would increase.
- E) Nothing would happen.

4. What would happen to the system if the total pressure were increased by adding $\text{CO}_2(g)$?

- A) Nothing would happen.
- B) More $\text{CO}_2(g)$ would be produced.
- C) The amount of CaO would increase.
- D) The amount of CaCO_3 would increase.
- E) Equilibrium would shift to the right.

5. What would happen to the system if the total pressure were increased by adding $\text{Ar}(g)$?

- A) Nothing would happen.
- B) More $\text{CO}_2(g)$ would be produced.
- C) The amount of CaO would increase.
- D) The amount of CaCO_3 would increase.
- E) Equilibrium would shift to the right.

Use the following to answer questions 6-9:

Consider the reaction $2\text{H}_2(g) + \text{O}_2(g) \rightleftharpoons 2\text{H}_2\text{O}(g)$ at some equilibrium position. Using the following choices, indicate what will happen if the changes below are made.

- a. shifts to the left
- b. shifts to the right
- c. no change

6. Additional $\text{H}_2\text{O}(g)$ is injected into the reaction vessel.

7. Some $\text{H}_2(g)$ is removed from the reaction vessel.

8. The size of the reaction vessel is decreased.

9. Some $\text{He}(g)$ is injected into the reaction vessel.