Name:

Period:

LeChatlier’s Principle

1. Define the following:
   1. **LeChatlier’s Principle –**
   2. **Reactants –**
   3. **Products –**
   4. **Endothermic Reaction -**
   5. **Exothermic Reaction -**
2. Name the three ways in which the equilibrium can be affected. How is it affected? [Start with: As \_\_\_\_ increases, \_\_\_\_\_\_.]
3. Fill in the table below. Tell me which side of the equilibrium will be shifted, Left or Right.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Chemical**  **Reaction** | **# Gas on Left, Right** | **Endo or Exo- Thermic?** | **Add more Products** | **Pressure Decreases** | **Temp Decreases** | **Add more Reactants** | **Pressure Increases** | **Temp Increase** |
| N2(g) + 3H2(g) ⇌ 2NH3(g) + Heat | 4, 2 | EXO | LEFT | LEFT | RIGHT | RIGHT | RIGHT | LEFT |
| CaCO3(s) + Heat ⇌ CaO(s) + CO2(g) | 0, 1 | ENDO | LEFT | RIGHT | LEFT | RIGHT | LEFT | RIGHT |
| 2 SO2(g) + O2 (g) ⇌ 2SO3(g) + Heat | 3, 2 | EXO | LEFT | LEFT | RIGHT | RIGHT | RIGHT | LEFT |
| N2O4(g) + Heat ⇌  2NO2(g) | 1, 2 | ENDO | LEFT | RIGHT | LEFT | RIGHT | LEFT | RIGHT |
| CH4(g) + 2O2(g) ⇌ CO2 (g) + 2H20(l) + Heat | 3, 1 | EXO | LEFT | LEFT | RIGHT | RIGHT | RIGHT | LEFT |
| P4(s) + 6Cl2(g) ⇌ 4PCl3(l) +Heat | 6, 0 | EXO | LEFT | LEFT | RIGHT | RIGHT | RIGHT | LEFT |
| PCl3(g) + 3NH3(g) + Heat⇌ P(NH2)3(g) + 3HCl(g) | 4, 4 | ENDO | LEFT | EQUAL | LEFT | RIGHT | EQUAL | RIGHT |
| N2(g) + O2(g) ⇌ 2NO(g) +Heat | 2, 2 | EXO | LEFT | EQUAL | RIGHT | RIGHT | EQUAL | LEFT |
| 4 NO(g) + 6 H20(g) ⇌ 4NH3(g) + 5 O2(g) + Heat | 10, 9 | EXO | LEFT | LEFT | RIGHT | RIGHT | RIGHT | LEFT |
| 2NCl3(l) + Heat ⇌ N2(g) + 3Cl2 (g) | 0, 4 | ENDO | LEFT | RIGHT | LEFT | RIGHT | LEFT | RIGHT |