**Table I Practice**

**Directions**: Answer the following questions in complete sentences using your knowledge of Chemistry.

1. What type of reaction does a positive ΔH value represent?
2. What happens in terms of heat energy to a reaction with a positive ΔH?
3. What type of reaction does a negative ΔH value represent?
4. What happens in terms of heat energy to a reaction with a negative ΔH?
5. If you reverse a reaction, what happens to the value of ΔH? What happens to the sign?
6. If you double the concentration of the reactants and products, what happens to the value of ΔH? What happens to the sign?
7. If you half the concentration of the reactants and products, what happens to the value of ΔH? What happens to the sign?
8. If you reverse the reaction, what happens to the sign of ΔH? What happens to the value?
9. If a given reaction is exothermic, will heat be found on the reactants side of the equation or the products side?
10. If a given reaction is endothermic, will heat be found on the reactants side of the equation or the products side?
11. If the ΔH for a given forward reaction is positive, will the reverse reaction be endothermic or exothermic? Explain.
12. If a given reaction is endothermic, what will be the sign for ΔH for the reverse reaction? Explain.
13. If the reverse reaction is endothermic, what is the sign of ΔH of the forward reaction? Explain.
14. If the original equation has a ΔH value of 50.0 kj, what is the ΔH of the same reaction if you reverse it and double the concentration on reactants and products. Explain.
15. If the original equation has a ΔH value of 50.0 kj, what is the ΔH of the same reaction if you reverse it and half the concentration on reactants and products. Explain

**Directions**: Using Table I, determine the heat of reaction and whether the reaction is endothermic or exothermic

|  |  |  |
| --- | --- | --- |
| **Reaction** | **ΔH (kJ/mol)** | **Endothermic or Exothermic**  **(how do you know?)** |
| CH4(g) + 2O2(g) 🡪 CO2(g) + 2H2O(l) | -890.4 | Exothermic b/c – ΔH means heat is released |
| 2H2(g) + O2(g) 🡪 2H2O(g) |  |  |
| N2(g) + 3H2(g) 🡪 2NH3(g) |  |  |
| 4NH3(g) 🡪 2N2(g) + 6H2(g) |  |  |
| CO(g) + ½O2(g) 🡪 CO2(g) |  |  |
| 4NO(g) 🡪 2N2(g) + 2O2(g) |  |  |

**Directions**: Rewrite the equation with the heat written in the proper location. Determine if the reaction is endothermic or exothermic. Explain your reasoning.

1. H2(g) + I2(g) 🡪 2HI(g) H2(g) + I2(g) + 53.0 kJ🡪 2HI(g) Exothermic or Endothermic:
   * Explanation: Endothermic because ΔH is positive (heat is added). If heat is absorbed, it is written as a reactant.
2. 2C(s) + H2(g) 🡪 C2H2(g) Exothermic or Endothermic:
   * Explanation:
3. C2H2(g) 🡪 2C(s) + H2(g) Exothermic or Endothermic:
   * Explanation:
4. 2CO(g) + O2 🡪 2CO2(g) Exothermic or Endothermic:
   * Explanation:
5. 4H2O(l) 🡪 4H2(g) + 2O2(g) Exothermic or Endothermic:
   * Explanation: