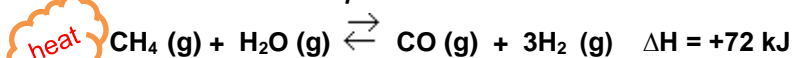
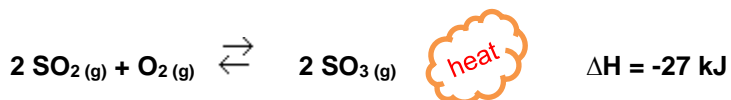


Equilibrium: LeChatlier's Principle Name: _____

Describe which direction the equilibrium will shift under the conditions listed.



- 1) Increase the concentration of the reactants **shifts right**
- 2) Increase the pressure **shifts left**
- 3) Add carbon monoxide **shifts left**
- 4) Decrease the concentration of the products **shifts right**
- 5) Decrease temperature **shifts left**
- 6) Add more water **shifts right**
- 7) Decrease the amount of hydrogen gas **shifts right**



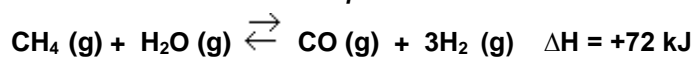
- 8) O_2 is added to the reaction **shifts right**
- 9) The concentration of SO_3 is increased **shifts left**
- 10) The temperature is increased **shifts left**
- 11) The pressure is increased **shifts right**
- 12) SO_2 is removed **shifts left**
- 13) The concentration of SO_3 is decreased **shifts right**

Theory Indicate if true or false. If false, then correct it.

- 14) At equilibrium, the concentration of reactants and products are equal. **FALSE – the concentration of reactants and products remain constant at equilibrium**
- 15) When a reaction reaches equilibrium, it stops. **FALSE – even though it visually looks like nothing changes, the rate of the forward reaction equals the rate of the reverse reaction**
- 16) A reversible reaction is one that can proceed in the forward and the reverse directions. **TRUE**
- 17) A reversible reaction in a closed container can never reach equilibrium. **FALSE – in a closed container, a reversible reaction will always reach equilibrium**
- 18) If ΔH is positive, then the reaction is endothermic. **TRUE**

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- 2) Increase the pressure
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