Practice Problems Set #5  
**DIRECTIONS:**

* YOU MUST ANSWER **EVERY QUESTION** IN ORDER TO GET **ANY** CREDIT!!!
* **HIGHLIGHT EACH QUESTION NUMBER** ON YOUR NOTEBOOK PAPER SO I CAN QUICKLY SEE THAT YOU HAVE DONE ALL THE PROBLEMS. IF I CAN’T FIND AN ANSWER, YOU WON’T GET CREDIT FOR ANY OF THE PROBLEMS!!!!
* **HIGHLIGHT ANY QUESTION NUMBERS ON THIS PAGE THAT YOU WANT HELP WITH, HAVE QUESTIONS WITH, ETC‼!**

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| **Q #** | **QUESTION** |
| 1 | What is equilibrium? |
| 2 | Are rates equal or concentrations equal when a reaction is at equilibrium? |
| 3 | What are the factors that can shift equilibrium? |
| 4 | Which way would equilibrium shift if N2 was removed?  N2(g) + 3H2(g) ↔2NH3(s) + 22 kJ |
| 5 | What would happen to equilibrium if NH3 was added? N2(g) + 3H2(g) ↔2NH3(s) + 22 kJ |
| 6 | What is the effect on the concentration of chlorine if we add PCl5 to  PCl5(s) ⇔ PCl3(g) + Cl2 (g) |
| 7 | What is the effect on the concentration of chlorine if add CO to  CO(g**)** + Cl2 (g)⇔ COCl2 |
| 8 | What is the effect on the concentration of chlorine if decrease pressure  H**2** (g)+ Cl2 (g)⇔ 2HCl(g) |
| 9 | What is the effect on the concentration of chlorine if increase pressure  2HI(g) + Cl2 (g)**⇔** 2HCl(g) + I2(s) |
| 10 | What is the effect on the concentration of chlorine if cool  4HCl(g) + O2 (g)**⇔** 2Cl**2**(g) + 2H2O(g) + heat |

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