



# UNIT 7 – ACIDS, BASES & SOLUTIONS

IPOD Questions

# IT'S *THE* PROBLEM OF *THE* DAY

## IPOD # 40

Answer select questions **(1,3,5,6,8,9,10,13)** on the worksheet titled “Solubility Curves Practice Problems.”

When finished, staple or tape the worksheet into your IPOD book marked with **IPOD #40**.



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## IPOD # 41

1. A solution has a volume of 2.0 L and contains 36.0 g of glucose ( $\text{C}_6\text{H}_{12}\text{O}_6$ ). What is the molarity of the solution?
2. How many milliliters of a solution of 4.0 M KI are needed to prepare 250.0 mL of 0.76 M KI?



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## IPOD # 42

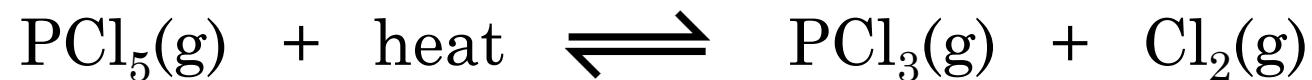
1. What is a typical unit for the rate of a chemical reaction?
2. Describe collision theory. How do collisions affect reaction rates?
3. What are the 2 requirements for a “successful” collision?
4. Think back to the kinetics lab.  
*What are the four main factors that influence reaction rates?*



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## IPOD # 43

What effect will each of the following changes have on the equilibrium position for this reversible reaction? After you identify which direction the shift will occur, identify what happens to the concentration of  $\text{Cl}_2$  (*will the concentration increase or decrease?*).



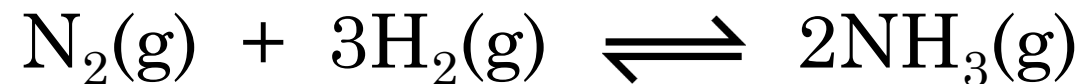
- a)  $\text{Cl}_2$  is added.
- b) Pressure is increased.
- c) Heat is removed.
- d)  $\text{PCl}_3$  is removed as it forms.



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## IPOD # 44

The reaction in which ammonia is formed is shown below.



At equilibrium, a 1-L flask contains 0.15 mol H<sub>2</sub>, 0.25 mol N<sub>2</sub>, and 0.10 mol NH<sub>3</sub>.

- a) What is the equilibrium constant expression?
- b) Calculate the value of the equilibrium constant,  $K_{\text{eq}}$ , for this reaction.



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## IPOD # 45

1. Classify each solution as acidic, basic, or neutral?
  - a)  $[\text{H}^+] = 6.0 \times 10^{-10} \text{ M}$
  - b)  $[\text{OH}^-] = 3.0 \times 10^{-2} \text{ M}$
2. If the pH of a solution is 5.0, determine the concentration of hydrogen-ion,  $[\text{H}^+]$ .
3. What is the pH of a solution that has a hydroxide-ion concentration,  $[\text{OH}^-] = 4.3 \times 10^{-5} \text{ M}$ ?



# IT'S *THE LAST* PROBLEM OF *THE DAY*

## IPOD # 46

1. How many milliliters of 0.45 M HCl will completely neutralize 25.0 mL of 1.00 M KOH?

