

1. What is the formula for the conjugate base of each of the following?

a) HI

b)  $\text{HCO}_3^-$

c)  $\text{H}_2\text{CO}_3$

[1] \_\_\_\_\_

2. Write the formulas for the anhydrides of the following.

a)  $\text{Ba}(\text{OH})_2$

b)  $\text{H}_2\text{SO}_4$

[2] \_\_\_\_\_

3. What is the formula of the acid or base formed when each of the following is added to water?

a)  $\text{Fe}_2\text{O}_3$

b)  $\text{SO}_2$

[3] \_\_\_\_\_

4. A solution of the acid HCl is added to a solution of the base CsOH. What is the formula of the salt formed?

[4] \_\_\_\_\_

5.  $43.8 \text{ cm}^3$  of 2.14 M HCl neutralizes  $45.4 \text{ cm}^3$  of  $\text{Ba}(\text{OH})_2$ . Find the concentration of the base.

[5] \_\_\_\_\_

6. What volume of 0.382 M KOH will neutralize  $59.4 \text{ cm}^3$  of 0.430 M  $\text{HNO}_3$ ?

[6] \_\_\_\_\_

7. Find the pH of a 0.0840 M solution of the strong acid HCl.

[7] \_\_\_\_\_

8. Determine the pH of a  $7.4 \times 10^{-3}$  M NaOH solution.

[8] \_\_\_\_\_

9. Find the hydronium ion concentration in a water solution when the hydroxide concentration is  $4.85 \times 10^{-6}$  M.

[9] \_\_\_\_\_

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Key Sheet

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a)  $I^-$   
b)  $CO_3^{2-}$   
[1] c)  $HCO_3^-$   
\_\_\_\_\_

a) BaO  
[2] b)  $SO_3$   
\_\_\_\_\_

a)  $Fe(OH)_3$   
[3] b)  $H_2SO_2$   
\_\_\_\_\_

[4] CsCl  
\_\_\_\_\_

[5] 1.03 M  
\_\_\_\_\_

[6]  $66.9 \text{ cm}^3$   
\_\_\_\_\_

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Key Sheet

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[7] 1.08

[8] 11.9

[9]  $2.06 \times 10^{-9}$  M