

## 4.11 pH and pOH

Name: \_\_\_\_\_

1. Calculate the pH and pOH of the following solutions:

	pH	pOH
a. $[\text{H}_3\text{O}^+] = 1.0 \times 10^{-5}\text{M}$		
b. $[\text{OH}^-] = 7.53 \times 10^{-3}\text{M}$		
c. 1.0 M HCl		
d. 0.125M NaOH		
e. $6.00 \times 10^{-3}\text{M Ca(OH)}_2$		
f. 0.125M $\text{H}_2\text{SO}_4$		
g. 12.5 M HBr		

2. Calculate the
- $[\text{H}_3\text{O}^+]$
- and the
- $[\text{OH}^-]$
- of solutions with

	$[\text{H}_3\text{O}^+]$	$[\text{OH}^-]$
a. pH= 4.2		
b. pH = 6.9		
c. pH= 1.4		
d. pH= 12.5		
e. pOH = 7.5		
f. pOH = 9.561		

3. Calculate the
- $[\text{OH}^-]$
- , pOH, and pH of the following

a. 25 g of KOH in 1.00 L of water

b. 150.0 g of NaOH in 2.00 L of water

- 4.
- $K_w$
- at 35 °C is
- $2.09 \times 10^{-14}$
- . What is pH and POH of pure water at this temperature?

5. Water is cooled. The pH of pure water at this new temperature was found to be 7.23 What is the
- $K_w$
- and
- $[\text{OH}^-]$
- of the pure water at this cooler temperature?