

Name \_\_\_\_\_ BethKEY \_\_\_\_\_

### Calculating pH

**Significant Figure Rule for dealing with logs:** The number of **decimals** in the **pH** is equal to the number of **significant figures** in the **molarity**.

Calculate pH for the following:

1.  $[\text{HCl}] = 0.000035\text{M}$

$\text{pH} = 4.46$

2.  $[\text{HNO}_3] = 0.0061\text{M}$

$\text{pH} = 2.21$

3.  $[\text{H}_2\text{SO}_4] = 0.00055\text{M}$

Hint: Write the equation for the ionization of  $\text{H}_2\text{SO}_4$ . How many  $\text{H}^+$  will form?

$\text{pH} = 2.96$

4.  $[\text{NaOH}] = 9.3 \times 10^{-6}\text{M}$  Hint:  $\text{pH} + \text{pOH} = 14$

$\text{pH} = 8.97$

5.  $[\text{Ca}(\text{OH})_2] = 0.0043\text{M}$

$\text{pH} = 11.93$

$\text{pH} = -\log[\text{H}^+]$

$\text{pOH} = -\log[\text{OH}^-]$

$\text{pH} + \text{pOH} = 14$

$10^{-\text{pH}} = [\text{H}^+]$

$10^{-\text{pOH}} = [\text{OH}^-]$

Calculate pOH for the following:

6.  $[\text{HCl}] = 0.0024\text{M}$

$\text{pOH} = 11.38$

7.  $[\text{NaOH}] = 0.00037\text{M}$

$\text{pOH} = 3.43$

What is  $[\text{H}^+]$  in the following?

8.  $\text{pH} = 6.71$

$1.9 \times 10^{-7}\text{M}$

9.  $\text{pH} = 7$

$1 \times 10^{-7}\text{M}$

10.  $\text{pH} = 2.46$

$3.5 \times 10^{-3}\text{M}$

11.  $\text{pOH} = 8.44$

$2.8 \times 10^{-6}\text{M}$

12.  $\text{pOH} = 3.85$

$7.1 \times 10^{-11}\text{M}$