

NAME: _____

DATE: _____

Concentration and pH

(you MUST learn how to use your calculator correctly to do this)

1. What is the pH of a solution with a $[H^+]$ of $3.5 \times 10^{-5} M$? Write the keys in the order you would type them on your calculator.

Clear log 3.5 x 2nd log

pH
= 4.456

2. What is the pH of a solution with a $[H^+]$ of $1.3 \times 10^{-3} M$? Write the keys in the order you would type them on your calculator.

Clear log 1.3 2nd 10x (-) 3)) = -2.886

= 2.88

3. What is the pH of a solution with a $[H^+]$ of $6.2 \times 10^{-6} M$? Write the keys in the order you would type them on your calculator.

Clear log (6.2 2nd 10^x (-) 6)) = -5.21

= 5.21

4. What is the pH of a solution with a $[H^+]$ of $1.4 \times 10^{-2} M$? Write the keys in the order you would type them on your calculator.

Clear log 1.4 2nd 10^x (-) 2)) = -1.85

= 1.85

5. What is the pH of a solution with a $[H^+]$ of $3.5 \times 10^{-11} M$? Write the keys in the order you would type them on your calculator.

Clear log 3.5 2nd 10^x (-) 11)) = -10.45

= 10.45

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1. What is the pH of a solution with a $[H^+]$ of $2.5 \times 10^{-2} M$?

1.6

2. What is the pH of a solution with a $[H^+]$ of $3.65 \times 10^{-4} M$?

3.43

3. What is the pH of a solution with a $[H^+]$ of $1.23 \times 10^{-5} M$?

4.91

4. What is the pH of a solution with a $[H^+]$ of $9.8 \times 10^{-1} M$?

0.0087

5. What is the pH of a solution with a $[H^+]$ of $7.5 \times 10^{-8} M$?

7.1

6. What is the pH of a solution with a $[H^+]$ of $2.72 \times 10^{-10} M$?

9.56

7. What is the pH of a solution with a $[H^+]$ of $1.92 \times 10^{-3} M$?

2.72

8. What is the pH of a solution with a $[H^+]$ of $3.5 \times 10^{-12} M$?

11.5

9. What is the pH of a solution with a $[H^+]$ of $5.71 \times 10^{-5} M$?

4.24

10. What is the pH of a solution with a $[H^+]$ of $4.3 \times 10^{-3} M$?

2.4

11. What is the order of most acidic to least acidic?

4 1 10 7 2 9 3 5 6 8

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pH and Concentration

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1. What is the concentration of a solution with a pH of 3.5? Write the keys in the order you would type them on your calculator.

$$\begin{aligned} 2^{\text{nd}} \quad 10 \times \left((-) 3.5 \right) \\ = 3.2 \times 10^{-4} \text{ M} \end{aligned}$$

2. What is the concentration of a solution with a pH of 1.3? Write the keys in the order you would type them on your calculator.

$$\begin{aligned} 2^{\text{nd}} \quad 10 \times \left((-) 1.3 \right) = 0.05 \\ = 5 \times 10^{-2} \text{ M} \end{aligned}$$

3. What is the concentration of a solution with a pH of 6.2? Write the keys in the order you would type them on your calculator.

$$2^{\text{nd}} \quad 10 \times \left((-) 6.2 \right) = 6.3 \times 10^{-7} \text{ M}$$

4. What is the concentration of a solution with a pH of 1.9? Write the keys in the order you would type them on your calculator.

$$2^{\text{nd}} \quad 10 \times \left((-) 1.9 \right) = 0.0126$$

5. Which solution is the most acidic with the highest $[H^+]$?

$$1.3 \times 10^{-2}$$

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1. What is the concentration of a solution with a pH of 2.5?

$$3.2 \times 10^{-3}$$

2. What is the concentration of a solution with a pH of 3.65?

$$2.24 \times 10^{-4}$$

3. What is the concentration of a solution with a pH of 1.23?

$$5.89 \times 10^{-2}$$

4. What is the concentration of a solution with a pH of 9.8?

$$1.6 \times 10^{-10}$$

5. What is the concentration of a solution with a pH of 7.5?

$$3.2 \times 10^{-8}$$

6. What is the concentration of a solution with a pH of 2.72?

$$1.91 \times 10^{-3}$$

7. What is the concentration of a solution with a pH of 1.92?

$$1.20 \times 10^{-2}$$

8. What is the concentration of a solution with a pH of 3.5?

$$3.2 \times 10^{-4}$$

9. What is the concentration of a solution with a pH of 5.71?

$$1.95 \times 10^{-6}$$

10. What is the concentration of a solution with a pH of 4.3?

$$5.0 \times 10^{-5}$$

11. What is the order of most acidic to least acidic?

3 7 1 6 8 2 10 9 5 4