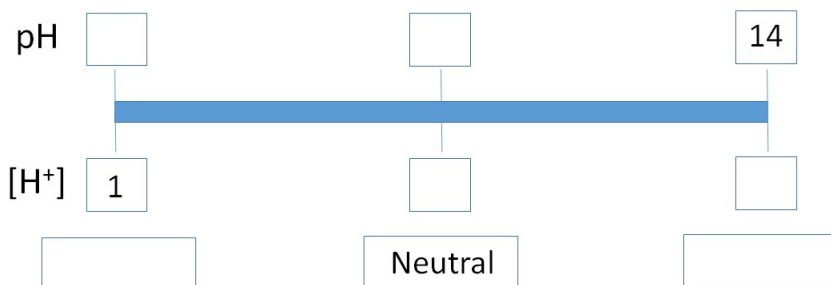


Name: _____

Date: _____

[5 pt] 1. Fill in the missing values on the pH scale below.



[5 pt] 2. What is the rule for SF and pH values? For each of the following state how many SF are present. In addition also state whether the solution is (A)cidic, (B)asic, or (N)eutral

(a) pH = 4.75 2(a) _____

(b) $[H^+] = 4.75 \times 10^{-2} M$ 2(b) _____

(c) pH = 7.000 2(c) _____

(d) $[H^+] = 2.0 \times 10^{-12} M$ 2(d) _____

(e) pH = 9.0 2(e) _____

[10 pt] 3. Complete the following calculations, be careful of SF.
Also for each state whether the solution is (A)cidic, (B)asic, or (N)eutral.

(a) What is the $[H^+]$ for a solution with pH = 8.83 3(a) _____

(b) What is the pH of a solution with $[H^+] = 2.4 \times 10^{-4}$ 3(b) _____

(c) What is the $[H^+]$ for a solution with pH = 1.38 3(c) _____

(d) What is the pH of a solution with $[H^+] = 1.9 \times 10^{-9}$ 3(d) _____

(e) What is the $[H^+]$ for a solution with pOH = 3.53 3(e) _____

CHE 101 - Homework - Ch 10c

- [5 pt] 4. State (Yes or No) whether each of the follow solutions would create a buffer. Explain why the system is a buffer or why it is not a buffer.
- (a) $\text{HCl} + \text{NaCl}$ 4(a) _____
- (b) $\text{H}_2\text{SO}_3 + \text{K}_2\text{SO}_3$ 4(b) _____
- (c) $\text{NaHCO}_3 + \text{H}_2\text{CO}_3$ 4(c) _____
- (d) $\text{NaOH} + \text{HC}_2\text{H}_3\text{O}_2$ 4(d) _____
- (e) $\text{HC}_2\text{H}_3\text{O}_2 + \text{NaF}$ 4(e) _____
- [5 pt] 5. Calculate the volume (in mL) of 3.0 M HCl required to neutralize 250.0 mL of 2.0 M $\text{Mg}(\text{OH})_2$. Show work to receive full credit. 5. _____
- [5 pt] 6. 125.0 mL of a NaOH solution with unknown molarity neutralized 175.0 mL of a 0.35 M H_2SO_4 solution. What is the molarity of the NaOH solution? Show work to receive full credit. 6. _____
- [5 pt] 7. Given that 400. mL of a 0.250 M solution of KOH is required to neutralize 250.0 mL of H_3PO_4 solution, what is the molarity of the acid solution? Show work to receive full credit. 7. _____