Chemistry 20: Unit 3: Solutions, Acids and Bases ***Name:***
pH and pOH calculations and other stuff ***Mark: /***

1. Calculate the pOH of limes which have a $[H_3O^+_{(aq)}]$ of 1.3×10^{-2} mol/L.

2. A strontium hydroxide solution is prepared by dissolving 5.00 g to make 200 mL of solution. Calculate the pH.

3. A vinegar solution has a hydrogen ion concentration of 1.5×10^{-3} mol/L. Calculate the pH of the solution.

4. A cleaning solution has a pH of 2.92. What is the pOH of the solution? Is this solution acidic or basic?

5. Milk has a pOH of 6.55. Is this acidic, basic or neutral? Calculate the hydronium ion concentration of the milk?

6. A solution of magnesium hydroxide is prepared and has a pOH of 2.25. If 300mL of the solution is made, what mass of magnesium hydroxide was used to make the solution?

7. What volume of 1.5mol/L NaOH is needed to provide 0.75 mol of NaOH?

8. The following table has 5 solution that are made with different solutes. Complete the following table by filling in the expected results for each diagnostic test done for each solution.

Solute dissolved in $H_2O_{(l)}$	Conductivity Test (Yes or No)	Red Litmus Test (Red or Blue)	Blue Litmus Test (Red or Blue)
potassium chloride			
barium hydroxide			
propanol			
hydrogen chloride (gas)			
ammonium nitrate			

9. A student has a cylinder which contains 3.00 L of hydrogen chloride gas at a pressure of 100 kPa at 25^{o}C. All of the gas is emptied from the cylinder and dissolved to make 2.00 L of solution. What is the pH of the solution that was made? (hint: use your knowledge from the gases unit)