

## Chem B Final Math Review

1. You have a balloon at the bottom of the pool and it is taking up .56L of space. You let it go and as it rises to the top it goes to a size of 1.5L. What was the pressure at the bottom of the pool?
2. You add 34.5ml of 11.5M HI to water to make a final solution that has a volume of 568ml. What is the pH of the concentrated and diluted formula?
3. What are the new freezing point and boiling point if you add 2.3 moles of magnesium chloride to 267ml of water?
4. What are the new freezing point and and boiling point if you add 2.3 moles of  $\text{C}_6\text{H}_{12}\text{O}_6$  to 267ml of water?
5. How many moles of gas are in a sample that is under 1.26atm, a temp of 45 C, and takes up 5560ml of

space?

6. You are trying to determine the M of an HCl solution using titration. The first time you do this neutralization occurs after adding 8.5ml of 1.6 M NaOH to 45ml of HCl. The next neutralization occurs after adding 15ml of 1.6M to 80.2ml of HCl. What is the average molarity of the HCl and what is its pH.

7. How much NaCl will be produced if you add 35ml of 2M NaOH to an unlimited supply of HCl solution?

8. You add 54 gram of NaOH to 56.7mL of water and it goes from 34 C to 36.8 C. What is the heat that the water gained? What is the enthalpy (joules/mole) of NaOH?

9. Write out the balanced equation on what happens when you pour 45 grams of magnesium phosphate into water. How many moles and grams do you end up with for each product (excluding water)?