

Name \_\_\_\_\_

Period \_\_\_\_\_

**2nd Semester Final Review - Solutions**

1. Complete the table:

	Solute formula	Molar Mass of solute (g/mole)	Mass of Solute (g)	Moles of solute (mole)	Molarity of solution (M)	Volume of solution (L)
a	NaCl				1.00	1.00
b	NaOH		2.50			4.00
c	MgCl <sub>2</sub>		32.0			2.00
d	Al(OH) <sub>3</sub>		333		.500	
e	KBr				2.00	2.50

2. Calculate the number of moles and the number of grams of solute in each solution:

		Moles of solute (mol)	Molar Mass of solute (g/mol)	Mass of solute (g)
a	2.00 liter of 0.250 M NaCl			
b	300.0 mL of 3.00 M KNO <sub>3</sub>			

- How many moles of Sulfuric acid are in 2.00 liter of a 1.55 M H<sub>2</sub>SO<sub>4</sub> solution?
- Describe how you would prepare 3.00 liters of a 6.00 M solution of potassium hydroxide.
- If 9.5 ml of a 5.0 M stock solution of NaOH is diluted to a new volume of 15.0 ml, what is the concentration of the resulting solution?
- How many mL of 4.0 M K<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub> solution must be diluted in order to prepare 150 mL of a 1.0M solution?
- You need 250 mL of .025M NaCl, but the only supply of NaCl you have is 1.5M NaCl. How do you prepare the required solution?

8. Complete the table

	Solution concentration	Cation Formed	Cation Concentration	Anion formed	Anion Concentration	Total Ion Concentration
a.	3.0 M NaCl					
b.	1.0 M Al(OH) <sub>3</sub>					
c.	5.0 M NaOH					
d.	0.22 M MgBr <sub>2</sub>					
e.	0.10 M Na <sub>2</sub> S					