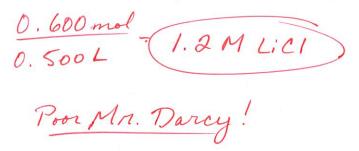
Name:
Molarity Practice Problems
1. Calculate the mass of potassium hydroxide necessary to create a 160 mL solution of 0.60 M KOH. $n = (0.60 \text{ mol})(0.160 \text{ k})$
0.60 M = 0.160 L
mass = 0.096 mol = $\frac{56.11g}{2001} = \frac{10.096 mol}{5.387} \Rightarrow \frac{5.4g koH}{5.4g koH}$
2. Gilligan needs to make a solution of 2.00 M CuSO ₄ . If he uses 15.3 g of CuSO ₄ , what is total volume of water needed after he adds the CuSO ₄ ?
2.00 M CuSOH = (15.3g)(1/159.62)
$V = \frac{(15.3)(1/159.62)}{2.00} = 0.04793$
(N = 0.0480L = 48.0 mL)
3. Describe the procedure for making a 200 mL solution of 0.046 M NaOH from solid NaOH tablets. Weigh out 368 mg of solid = [NaOH] × 0.200 = 0.046 * 0.200 Na OH. Dissolve them in m=0.0092 mot = 40.09 100-150 mL of water. Finally, m=0.368g = 368 mg Fill the beaker flask to the beaker flask to the description of the solution. He fills a beaker with 500 mL of water and 25.4 g LiCl. However, he believes that he made the solution too concentrated so he adds another 250 mL of water. What was the final concentration of his LiCl solution? 25.4g (mol) = 0.7987g mol ~ 0.600 mol
0.600 0.7989 mol = 0.800 M Lill

5. <u>Refer back to *4</u> – Mr. Darcy didn't pay attention in chemistry class so he doesn't know how to calculate molarity. If Mr. Darcy initially wanted a concentration of 1.0 M LiCl, was his initial solution accurate?



6. The salt content of seawater is mostly sodium chloride (NaCl). Approximately 3.5% of seawater is salt which means that for every 1000 mL of seawater, there are 35 g of salt. Assuming that all of the salt is NaCl, what is the molarity of the salt in seawater?

STUMPER – Mr. Frank decides he wants to prank the Northern Swim Team. He is going to fill the pool with red, water-soluble food coloring (because he can totally afford that much food coloring). In order to accomplish this, he needs to fill the pool to a concentration of 2.0 M. If the molecular weight of red dye is 496.42 g/mol, and the NHS pool has approximately 180,000 gallons of water, what mass of red dye does Mr. Frank need to buy to successfully turn the NHS pool red? Assume the pool is pure water (Hint: 1 gallon =3.785 liters)