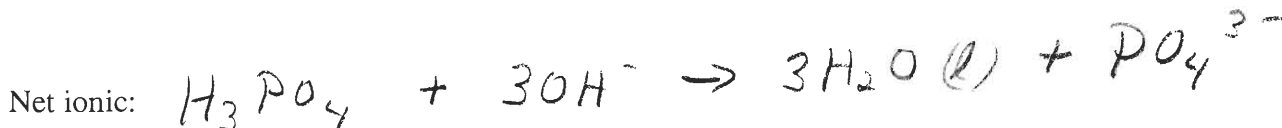
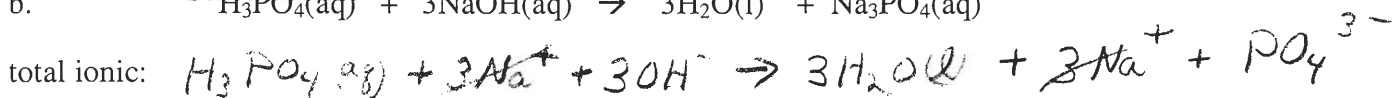
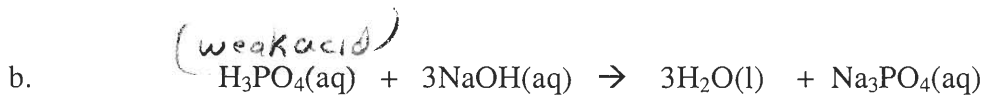
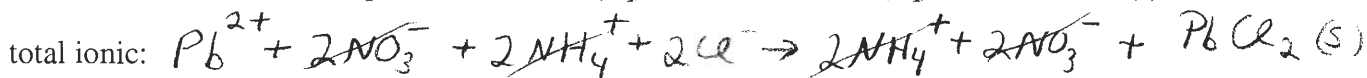
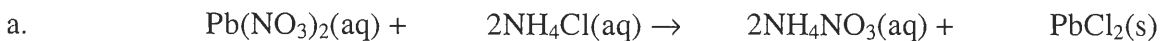


Show all work to receive credit.

1. (8 Pts) Write total and net ionic equations for each the following: (Watch for Weak acids)



2. (4 Pts) Determine the molarity of a solution that is prepared by dissolving 14.7 g of  $\text{Ca}(\text{OH})_2$  in water to give a total volume of 500.0 mL. (Molar Masses: Ca 40.08, H 1.008, O 16.00)

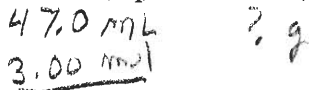
$$\frac{14.7 \text{ g } \text{Ca}(\text{OH})_2}{74.096 \text{ g/mol}} = 0.198 \text{ mol}$$

$$\frac{0.198 \text{ mol}}{0.5000 \text{ L}} = 0.397 \frac{\text{mol Ca}(\text{OH})_2}{\text{L}}$$

3. (4 Pts) A solution is prepared by taking 55.0 mL of 0.500 M HCl and diluting it to a volume of 400.0 mL. What is the molarity of the new solution?

$$M_1 V_1 = M_2 V_2 \quad \frac{(55.0 \text{ mL})(0.500 \text{ M})}{400.0 \text{ mL}} = 0.0688 \text{ M}$$

4. (6 Pts) How many grams of KOH would be required to neutralize 47.0 mL of 3.00 M  $\text{H}_2\text{SO}_4$  solution? (Molar masses: K 39.01, O 16.00, H 1.008)

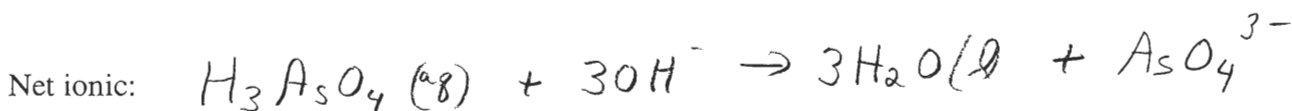
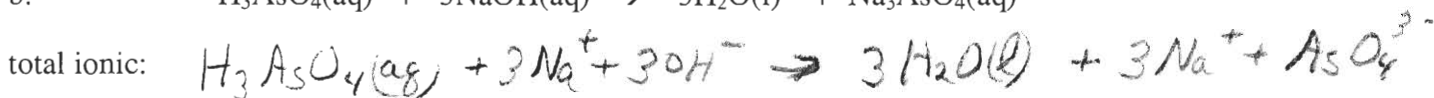
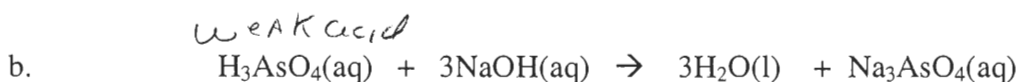
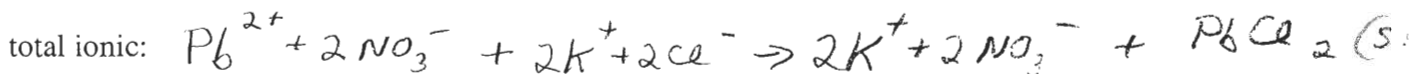


$$\frac{47.0 \text{ mL } \text{H}_2\text{SO}_4}{1000 \text{ mL } \text{H}_2\text{SO}_4} \times \frac{3.00 \text{ mol } \text{H}_2\text{SO}_4}{1 \text{ mol } \text{H}_2\text{SO}_4} \times \frac{2 \text{ mol KOH}}{1 \text{ mol } \text{H}_2\text{SO}_4} \times \frac{56.01 \text{ g KOH}}{\text{mol KOH}} = 15.8 \text{ g KOH}$$

5. (3 Pts) Give the formulas for any three strong acids. \_\_\_\_\_

Show all work to receive credit.

1. (8 Pts) Write total and net ionic equations for each the following: (Watch for Weak acids)



2. (4 Pts) Determine the molarity of a solution that is prepared by dissolving 19.7 g of  $\text{Ca}(\text{OH})_2$  in water to give a total volume of 400.0 mL. (Molar Masses: Ca 40.08, H 1.008, O 16.00)

$$\frac{19.7 \text{ g}}{0.4000 \text{ L}} \times \frac{1 \text{ mol}}{74.096 \text{ g}} = 0.665 \frac{\text{mol Ca}(\text{OH})_2}{\text{L}}$$

3. (4 Pts) A solution is prepared by taking 35.0 mL of 0.500 M HCl and diluting it to a volume of 500.0 mL. What is the molarity of the new solution?

$$M_1 V_1 = M_2 V_2 \quad \frac{(35.0 \text{ mL})(0.500 \text{ M})}{500.0 \text{ mL}} = 0.0350 \text{ M}$$

4. (6 Pts) How many grams of KOH would be required to neutralize 27.0 mL of 3.00 M  $\text{H}_2\text{SO}_4$  solution? (Molar masses: K 39.01, O 16.00, H 1.008)



$$27.0 \text{ mL } \text{H}_2\text{SO}_4 \times \frac{3.00 \text{ mol } \text{H}_2\text{SO}_4}{1000 \text{ mL } \text{H}_2\text{SO}_4} \times \frac{2 \text{ mol KOH}}{1 \text{ mol } \text{H}_2\text{SO}_4} \times \frac{56.0186 \text{ g KOH}}{\text{mol KOH}} = 9.08 \text{ g KOH}$$

5. (3 Pts) Give the formulas for any three strong acids. \_\_\_\_\_