Attach a printout of your data table and your "pH vs. Volume NaOH Added" graph.

1. Which equivalence point (first or second) was the more clearly defined one?

2-4. Report the molarity of the standard NaOH solution used. For the equivalence point you chose in Step 1, underline the data pairs on your data table which bracket the largest pH jump. Then for this equivalence point, calculate the volume and the number of moles of OH^- added.

5-8. Report the mass of diprotic acid used. From the number of moles of OH^- used, calculate the number of moles of acid in the sample, and then calculate the molar mass of the acid. Identify your unknown by giving the name and empirical formula of the listed diprotic acid having the best-matching molar mass. State the listed molar mass of this acid, and calculate the percentage error in your calculated molar mass.
9-10. Now repeat the above process (Steps 2-8) and calculate the molar mass of your unknown using the equivalence point not selected in Step 1. Again, calculate the percentage error for this calculated molar mass, and also calculate the percentage difference between the molar mass obtained this time and the one obtained in Steps 2-8.

11. On your graph of the titration curve, draw six reference lines and add labels (pK_{a1}, pK_{a2}, Point 1, 1st EP, Point 2, 2nd EP) similar to those shown in Figure 3 in the writeup.

12. Using these lines and labels, report below pK_{a1} and pK_{a2} for your unknown acid, and calculate the corresponding values of K_{a1} and K_{a2}. 