Complete the following questions and submit with your report.
1. The solubility of your assigned compound from Part A in 100 mL of water is given in *The Handbook of Chemistry and Physics* as 0.54 g at 14 °C and 18 g at 99 °C.

    Assigned Compound is: __I used with Phthalic Acid as an example_____.
    a. What is the theoretical volume of water required to dissolve your compound from Part A at 99°C (show your work)?
    Theoretical volume of water required to dissolve Compound from Part A:
      Mass of Phthalic Acid weighed out = 0.200 g **(you use what you actually weighed here!)**
        18g/100mL = 0.200g / X mL
        X mL = 0.200g x (100 mL/18g) = **1.11 mL**

    b. What is the maximum mass of your compound from Part A you could recover (assume ice-bath temperature of 14°C) based on this theoretical volume of water (show your work)?
    Mass of Phthalic Acid dissolved in theoretical volume at 14°C:
        0.54g/100mL = X g/1.11mL
        X g = (0.54g/100mL) x 1.11mL = 0.0059 g (mass still in solution at 14°C)
    Maximum Mass of Phthalic Acid recoverable at 14°C:
        0.200g-0.0059g = 0.194 g

    c. What is the maximum mass of your compound from Part A you could recover (assume ice-bath temperature of 14°C) based on the volume of water you actually used (show your work)?
        Volume of water actually used = 2.0 mL **(you use what you actually measured here!)**
    Mass of Phthalic Acid dissolved in actual volume at 14°C (ice bath temperature):
        0.54g/100mL = X g/2.0mL
        X g = (0.54g/100mL) x 2.0mL = 0.011 g (mass still in solution at 14°C)
    Mass of Phthalic Acid recoverable at 14°C (ice bath temperature):
        0.200g-0.011g = 0.189 g
    d. Calculate the % recovery of your compound from Part A based on the actual volume of water you used (show your work). This shows how well you performed the recrystallization and manipulated the sample (transfers, filtration, drying, etc.).
        mass you actually recovered (in Part A table) = 0.155g **(you use what you actually weighed here!)**
        % recovery = (0.155g/0.189g) x 100% = **82.0%**
    e. Calculate the % of your compound from Part A lost due to the use of a volume larger than theoretically required (show your work). This shows how careful you were in dissolving the sample in a minimal volume of water.

        % loss = (I0.194g-0.189gI/0.194) x 100% = **2.58%** note: (I I) is absolute value!

2. Which compound did you take the melting point of in Part B? _____
        What is your percent recovery for this compound? (show your work!):
Percent Recovery Compound = recovered mass X. x 100%
                          mass Y. used