Chemistry – Chapter 16 Book problems #4: Freezing & boiling point calculations

1. What is the freezing-point depression of an aqueous solution of 10.0 grams of glucose ($C_6H_{12}O_6$) in 50.0 grams of water?

2. Calculate the freezing-point depression of a benzene solution containing 400 grams of benzene and 200 grams of the molecular compound acetone (C_3H_6O). The K_f for benzene is $5.12^0C/m$.

3. What is the boiling point of a solution that contains 1.25 mol $CaCl_2$ in 1400 grams of water?

4. What mass of NaCl would have to be dissolved in 1.000 kg of water to raise the boiling point by 2.00^0 C?

5. What is the freezing point of a solution of 12.0 grams of CCl_4 dissolved in 750.0 grams of benzene? The freezing point of benzene is 5.46^0C (we are used to water freezing at 0^0C, so be careful in how you work that end). $K_f = 5.12^0C/m$