

## HELPFUL HINTS FOR ICE CREAM CALCULATIONS:

- For the sugar and milk solution, determine the solute and solvent.
  - Sugar is a nonelectrolyte... think about the DF, Dissociation Factor.
  - Assume milk has the characteristics of water so that you can convert easily to kilograms.
  - Find the moles of solute.
  - Use the moles of solute to find out how many tablespoons that is equal to. Think about converting from moles, to grams, to tablespoons.
- 
- For the salt and ice solution, determine the solute and solvent.
  - Remember salt is an electrolyte... think about DF, Dissociation Factor.
  - $\Delta t_f$  is the temperature you need to get to. Does your problem tell you that?
  - Find the molality of the solution.
  - Find the moles of solute.
  - Use the moles of solute to find out how many cups of solute you need.
  - Think about converting from moles to grams to tablespoons, to cups.

SHOW ALL YOUR WORK CLEARLY AND LEGIBLY... IT IS YOUR TICKET TO THE LAB AND WILL BE GRADED!!!

Helpful formulas:

$$\Delta t_f = (m)(DF)(K_f)$$

$$m = \frac{\text{moles solute}}{\text{Kg solvent}}$$

Check other conversion factors on the handout.