1. N31 - Calculations
2. N32 - Heat of Solutions
3. N33 - Solubility
4. N34 - Separation techniques
5. N35 - A little bit about colligative properties

* ~~Solutions and Mixtures~~ 
  + ~~Solutions = Homogeneous mixtures~~
    - ~~Solids, liquids, gases~~
* ~~Calculations~~ 
  + ~~Molarity~~
  + ~~“Molality, percent by mass, percent by volume not on exam”~~
* Particulate models
  + “Particulate representations of solutions communicate the structure and properties of solutions, by illustration of the relative concentrations of the components in the solution and drawings that show interactions among the components.”
* Separation techniques
  + “Explain the relationship between the solubility of ionic and molecular compounds in aqueous and nonaqueous solvents, and the intermolecular interactions between particles.”
  + “The components of a liquid solution cannot be separated by filtration. They can, however, be separated using processes that take advantage of differences in the intermolecular interactions of the components. a. Chromatography (paper, thin-layer, and column) separates chemical species by taking advantage of the differential strength of intermolecular interactions between and among the components of the solution (the mobile phase) and with the surface components of the stationary phase. b. Distillation separates chemical species by taking advantage of the differential strength of intermolecular interactions between and among the components and the effects these interactions have on the vapor pressures of the components in the mixture.”
* Solubility and miscibility
  + Always soluble list
    - Precipitation reactions frequently involve mixing ions in aqueous solution to produce an insoluble or sparingly soluble ionic compound. All sodium, potassium, ammonium, and nitrate salts are soluble in water.
  + Like mixes with like
* Net ionic equations
* Ksp – equilibrium
* Common ion effect on Ksp
* ~~Free energy of Dissolution~~
  + ~~The dissolution of a salt is a reversible process that can be influenced by environmental factors such as pH or other dissolved ions.~~
  + ~~Explain the relationship between the solubility of a salt and changes in the enthalpy and entropy that occur in the dissolution process.~~
  + ~~The free energy change (ΔG°) for dissolution of a substance reflects a number of factors: the breaking of the intermolecular interactions that hold the solid together, the reorganization of the solvent around the dissolved species, and the interaction of the dissolved species with the solvent. It is possible to estimate the sign and relative magnitude of the enthalpic and entropic contributions to each of these factors. However, making predictions for the total change in free energy of dissolution can be challenging due to the cancellations among the free energies associated with the three factors cited.~~