

Homework 3
due September 18, 2008

If you find yourself without enough information, make and justify a reasonable approximation. Please answer all parts of a question! (This is good practice for an exam setting.)

1. Felder and Rousseau, problem 2.26
2. Felder and Rousseau, problem 3.3, parts a,b,c only
3. Felder and Rousseau, problem 4.1
4. Felder and Rousseau, problem 4.4, parts b,d only
5. Draw a flowsheet based on the initial description for Felder and Rousseau, problem 4.13. Label the compounds in each stream. Also add to your flowsheet as much quantitative information as possible from the given information in part (b). Don't actually answer the given questions (i.e. the data fit, material balances, and run-time diagnosis).
6. Felder and Rousseau, problem 4.9. Solve the problem as described in the text. You will need to make the flowsheet again (it's good practice). In addition, describe (in words) the unknowns and equations required to determine the overall amounts and mass fractions in each stream. How many degrees of freedom are there? The components in this problem are water, sugar, and "solids".
7. Felder and Rousseau, problem 4.12. Solve the problem as described in the text.